TANGANYIKA TERRITORY

Annual Medical and Sanitary Report

FOR THE YEAR ENDING

31st December, 1929

Price 5/-

PUBLISHED BY
THE CROWN AGENTS FOR THE COLONIES,
4, MILLBANK, LONDON, S.W.I.
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Office of the
Director of Medical and Sanitary Services,
Dar-es-Salaam,
Tanganyika Territory.
15*th July*, 1930.

Sir,

I have the honour to submit, for the information of His Excellency the Governor and for transmission to the Right Honourable the Secretary of State for the Colonies, the Medical Report on the health and sanitary condition of the Tanganyika Territory for the year 1929, together with the Returns, etc., appended thereto.

I have the honour to be,
Sir,
Your obedient Servant,
J. O. Shircore,
Director of Medical and Sanitary Services,
Tanganyika Territory.

The Honourable
The Chief Secretary to the Government,
Dar-es-Salaam.

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TANGANYIKA TERRITORY

REFERENCE

Approximate dispositions of Medical Units during 1929.

- Fully Staffed European and Native Hospitals
- Health Officers
- Maternity and Child Welfare Clinic i/c European Health Visitors
- Native Hospitals i/c Medical Officer
- " " i/c Sub Assistant Surgeon
- " " i/c Indian Compounder
- " " i/c African Medical Assistants
- Tuberculous Hospitals
- African District Sanitary Inspectors
- Tribal Dispensaries

Scale = 1: 2,000,000

MILES 10 0 50 100 150 200 MILES

KILOMETRES 10 0 50 100 150 200 250 300 KILOMETRES

REFERENCE

International Boundaries shewn thus,		Towns of first importance shewn thus,	MAHENGE
Provincial Boundaries " "		Towns of second importance " "	TUKUYU
District Boundaries " "		Other Towns & Villages " "	Narrambunga
Main Roads " "		Provinces " "	LINDI
Other Roads & Tracks " "		Districts " "	Njombe
Railways " "		Rivers " "	Swamp

B.16.A

Compiled & Drawn by A.R. McLennan

(REVISED EDITION, OCTOBER 1929). REGD. PLAN No.

SURVEY DEPT TT

TANGANYIKA TERRITORY.

Annual Medical and Sanitary Report, 1929.

SECTION I.—ADMINISTRATIVE.

(a) Staff.

European :

Director of Medical and Sanitary Services.
Deputy Director of Medical Service.
Deputy Director of Sanitary Service.
Deputy Director of Laboratory Service.
5 Senior Medical Officers.
4 Senior Health Officers.
1 Sleeping Sickness Officer.
44 Medical Officers.
2 Dental Surgeons.
1 Assistant Bacteriologist.
1 Entomologist.
1 Analytical Chemist.
1 Matron.
4 Senior Nursing Sisters.
9 Sisters and Health Visitors.
32 Nursing Sisters.
2 Laboratory Assistants.
1 Chief Clerk.
2 Clerks.
1 Storekeeper.
2 Assistant Storekeepers.
1 Hospital Quartermaster.
1 Medical Instructor.
1 Assistant Medical Instructor.
1 Superintendent, Mental Hospital.
1 Matron, Mental Hospital.
1 Building Inspector.
2 Senior Sanitary Superintendents.
17 Sanitary Superintendents.
1 Dental Mechanic.

Special Expenditure :

(For Kahama Maternity and Child Welfare Research.)

European :

1 Medical Officer.
2 Sisters and Health Visitors.

Asiatic :

4 Sub-Assistant Surgeons.

African :

2 Motor Drivers.
20 Ayahs.

Asiatic :

1 Assistant Surgeon.
3 Senior Sub-Assistant Surgeons.
58 Sub-Assistant Surgeons.
36 Compounders.
1 Special Grade Clerk.
1 1st Grade Clerk.
3 2nd Grade Clerks.
15 3rd and 4th Grade Clerks.
2 Sanitary Inspectors.

African :

10 Clerks.
84 Dispensers.
218 Sanitary Inspectors.
7 Vaccinators.
781 Hospital Orderlies, Nurses, Dressers and Menials.
1,212 Sanitary Labourers.
4 Motor Drivers.

Appointments.

European :

Dr. A. S. Mackie to be a Senior Medical Officer, 18th July.
Dr. N. Chilton to be a Medical Officer, 15th March.
Dr. D. B. Wilson do. do.
Dr. I. C. Middleton do. 7th June.
Dr. J. W. Walker do. 2nd August.
Miss A. C. Macphee to be a Sister and Health Visitor, 15th February
Miss E. B. Short to be a Nursing Sister, 1st January.
Miss V. I. Dargan do. 18th April.
Mrs. J. M. Goddard do. 27th April.
Miss E. M. White do. 10th May.
Miss C. M. Middleton do. 7th June.
Miss A. C. Troughton do. 1st July.
Miss L. Somen do. 30th August.
Miss A. Smith do. 27th September.
Miss A. H. Gittins do. 10th October.
Mrs. E. L. Evans do. 12th October.
Mr. J. W. Jepp to be a Sanitary Superintendent, 10th May.
Mr. R. B. Owen do. 7th June.
Mr. C. W. Manton do. 23rd September.
Mr. J. H. Salter do. 7th November.
Mr. H. Cooper do. 20th December.
Mr. S. Anderberg to be a Dental Mechanic, 18th April.

Asiatic :

Mr. R. J. Koya to be a Sub-Assistant Surgeon, 4th April.
Mr. M. Vishwanathan do. 9th April.
Mr. Piara Singh do. 5th June.
Mr. D. C. Mehta do. 18th June.
Mr. M. A. Carpenter do. 19th June.
Mr. B. N. Dikshit do. 17th July.
Mr. V. V. Dabholkar do. do.
Mr. J. B. Gonsalves do. 23rd October.
Mr. H. S. Paranjpe do. 18th December.
Mr. J. P. Kotwal to be a 3rd Grade Clerk, 1st August.
Mr. D. R. Pereira do. 4th do. do.

Acting Appointments.

European :

Dr. G. R. C. Wilson, Acting Deputy Director of Medical Service from 29th November to end of the year.
Dr. R. R. Scott, M.C., Acting Deputy Director of Sanitary Service from 13th April to 14th October.
Dr. J. F. Corson, M.B.E., Acting Sleeping Sickness Officer from 6th March to 6th December.
Dr. A. I. Meek, Acting Senior Health Officer from 1st January to 20th October.
Dr. R. Mackay, Acting Senior Health Officer from 21st October to end of the year.
Mrs. E. B. Maclean, Acting Sister and Health Visitor from 23rd June to end of the year.
Mr. T. Bell, Acting Senior Sanitary Superintendent from 21st October to end of the year.
Mr. N. McL. Moore, Acting Chief Clerk from 31st March to 28th October.
Mr. W. H. Jones, Acting Medical Storekeeper from 13th January to 28th October.

PROMOTIONS.

European :

Dr. H. J. O'D. Burke-Gaffney, Medical Officer, to be Assistant Bacteriologist, 26th January.
Mr. W. A. Moore, Sanitary Superintendent, to be Senior Sanitary Superintendent, 1st April.

Asiatic :

Mr. C. K. Borsada, Sub-Assistant Surgeon, to be Senior Sub-Assistant Surgeon, 1st April.
Mr. J. F. de Souza, 4th Grade Clerk, to be a 3rd Grade Clerk, 2nd April.
Mr. T. V. Abhyankar, 4th Grade Clerk, to be a 3rd Grade Clerk, 2nd April.
Mr. A. D'Cruz, 4th Grade Clerk, to be a 3rd Grade Clerk, 1st May.

RETIREMENTS.

Nil.

AGREEMENTS EXPIRED.

Miss M. V. McIlroy, Sister and Health Visitor, 2nd October.
Miss D. A. Porter, Nursing Sister, 16th December.
Miss M. Andrews, do. 5th March.
Mrs. E. L. Evans, do. 30th June.
Miss E. M. Hayward, do. 1st November.

APPOINTMENT TERMINATED.

Mr. Chunilal Khanna, Sub-Assistant Surgeon, 11th November.

RESIGNATION.

Asiatic :

Mr. J. F. Macedo, Sub-Assistant Surgeon, 10th December.

DEATH.

Mr. M. A. Shaikh, Compounder, 16th August.

INVALIDINGS.

Mrs. J. M. Goddard, Nursing Sister, 29th July.
Miss M. L. E. Avant, Sister and Health Visitor, 23rd September.

(b) Legislation affecting Public Health enacted during the Year.

Government Notice No. 19 under the Dangerous Drugs Ordinance, 1928 (No. 9 of 1928), orders that Part V of the Ordinance shall apply to the drugs dihydro-oxycodeinone, dihydrocodeinone and their respective salts, to any preparation, admixture and extract containing the above-mentioned drugs and similarly to benzoyl-morphine.

Government Notice No. 76 under the Customs Ordinance, 1922 (No. 3 of 1922), prohibits the importation at the port of Mwanza of raw cotton.

Mining Ordinance, 1929, Part XII—Inspections and Accidents, empowers the Commissioner of Mines or an officer duly authorised to inspect, and take proceedings in default, with regard to any dangerous practice connected with mining or prospecting, which may result in loss of life or serious injury to any person, and to enquire into and assess the amount of compensation when necessary.

Government Notice No. 131 under the Courts Ordinance, 1920 (No. 6 of 1920), empowers the Labour Officers of the Tanga, Northern, Eastern and Iringa Provinces, to hold a subordinate Court of the Second Class in the respective districts.

Government Notice No. 158, The Air Navigation Directions, 1929 (No. 1), Section IX (I), provides for the general and special medical examinations of applicants for "A" and "B" Pilots' and Navigators' Licences. Section XIII deals with the question of medical inspection and quarantine of pilot and passengers of aircraft landing in the Territory.

Government Notice No. 211 under the Native Courts Ordinance, 1929 (No. 5 of 1929). The Native Courts (Corporal Punishment) Regulations, 1929, defines "adult" and "juvenile," and section 4 exempts females and males over 45 years. This section also provides for the limitation of power to award and the manner in which corporal punishment shall be conducted.

Government Notice No. 225 under the Dangerous Drugs Ordinance, 1928 (No. 9 of 1928), orders that the Ordinance shall apply to esters of morphine and their respective salts and any preparation, admixture and extract containing any of the said esters.

(c) Financial.

	£
Revenue	12,094
Expenditure	252,476

II.—PUBLIC HEALTH.

(a) General Remarks.

This is the tenth Annual Medical and Sanitary Report of the Territory, and it can be stated that the public health has generally been satisfactory. Steady expansion of the medical staff, particularly of the African units, has been maintained.

Maternity and Child Welfare.—Although only one new clinic was opened during the year, the attendance at the other clinics has increased in some areas to a remarkable degree (*see* table on page 108).

African Dispensers.—There was an addition of 17 to the staff, making 81, and 22 more remained under training at the end of the year. All the dispensers receive thorough tuition in the technique of intravenous and intramuscular injection for the treatment of yaws, syphilis, bilharzia and sleeping sickness.

Some idea of the scope and potentialities of the above-mentioned units might be obtained from the notes and photographs shown.

Photographs Nos. 1 to 6, accompanied with Notes, by Dr. Edmond, Sleeping Sickness Area.

No. 1.

No 2.

Ushietu Native Authority Hospital. Used as a temporary treatment centre. Examination of fresh blood for trypanosomes.

No. 3.

No. 4.

No. 5.

No. 6.

Routine intravenous treatment by African Dispenser Jarson and Dresser Simon Kauseni.

No. 7.

Assembly of patients awaiting injections for Yaws and Syphilis—photograph by Sub-Assistant Surgeon Kelkar.

No. 8.

Baby Show at Mkalama.

Some of the Maternity and Child Welfare Clinics and Members of the Staff.

No. 9.

Dar-es-Salaam.

No. 10.

Nzega.

No. 11.

Kongwa—Church Missionary Society's Clinic, partly subsidised by Government.

No. 12.

Maternity and Child Welfare Staff—Itaranganya Clinic,
Kahama District.

African District Sanitary Inspectors.—The number of Inspectors remained at 185 ; a further increase is contemplated during the forthcoming year.

Tribal Dressers.—Keen interest has been displayed by the Tribal Authorities in providing money annually for an extension of the scope of this unit. It is estimated that a total of 334 Tribal Dispensaries will be functioning by the end of 1930.

The number of cases treated amounted to 190,545, 49,245 more than last year. As a result of the numbers treated there has been a marked reduction in the attendance of hospital cases (*see* page 109).

There can be little doubt that village natives, suffering from injuries and complaints which are trivial in the first instance, but which through lack of immediate first aid and simple treatment develop into serious trouble, necessitating perhaps several days' journey to a hospital, are now able to obtain early attention at their own village dispensaries.

I think it can be stated with some confidence that the full complement of 1,000 dispensaries, *i.e.*, 1 per 5,000 of the population of the Territory, will be established within the next four to five years.

(1) General Diseases.

Eighty-four cases of malignant diseases were recorded, as compared with 69 and 86 during the two preceding years. For the anatomical distribution *see* page 237, numbers 43–49 of Tables V and VI, and a note with photographs on page 171. Attention is also drawn to the cases reported on pages 181, 182, 192 and 199.

Deficiency Diseases.—There were only 35 cases of scurvy and 13 of beri-beri reported throughout the Territory. The health of the inmates of the prisons has been extremely good, and a marked reduction has taken place in the death-rate of the long-term prisoners.

	1925.	1926.	1927.	1928.	1929.
Number of deaths	59	60	34	49	23
Daily average number of prisoners during the year	1,760·12	1,858·80	1,848·04	1,826·5	1,905·1
Total number of prisoners during year ..	9,091	8,460	7,710	7,373	7,919
Percentage of deaths to average number of prisoners	3·30	3·22	1·78	2·68	1·20
Percentage of deaths to total number of prisoners	0·65	0·70	0·44	0·66	0·29

In order to provide expectant mothers and children with supplies of Vitamin A and D it is proposed to include adequate quantities of cod liver oil in the schedule of drugs for the Tribal Dispensaries.

Nervous and Mental Diseases.—	1927.	1928.	1929.
Cases	3,298	3,285	2,127

There were 16 cases of locomotor ataxia, 109 of various forms of paralysis, none of general paralysis of the insane, 110 of other forms of mental alienation, and 254 of epilepsy.

Diseases of the Circulatory System.—	1927.	1928.	1929.
Cases	1,349	1,591	1,334
Deaths	15	18	26
Percentage of cases to total cases ..	0·34	0·40	0·33
Percentage of deaths to total deaths ..	1·62	1·46	1·61

Diseases of the Respiratory System.—	1927.	1928.	1929.
Cases	40,281	41,091	40,176
Deaths	149	218	250
Percentage of cases to total cases ..	10·15	10·13	10·15
Percentage of deaths to total deaths ..	15·02	17·67	15·48

Acute and chronic bronchitis 30,427 cases, with 12 deaths, lobar and broncho-pneumonia 1,199, with 221 deaths, and other diseases of the respiratory system 8,550, with 17 deaths.

Lobar and Broncho-pneumonia.—	1927.	1928.	1929.
Cases	855	1,264	1,199
Deaths	125	186	221
Percentage of cases to total cases	0·21	0·31	0·30
Percentage of deaths to total deaths	12·60	15·08	13·68
Case mortality—per cent	14·6	14·7	18·4

Diseases of the Digestive System.—	1927.	1928.	1929.
Cases	66,475	78,363	82,324
Deaths	250	308	425
Percentage of cases to total cases	16·76	19·32	20·79
Percentage of deaths to total deaths	25·20	24·99	26·32

The major distribution of the 425 deaths is as follows :—

Arusha	31
Dar-es-Salaam	39
Kilosa	40
Morogoro	68
Moshi	15
Mwanza	21
Tabora	19
Tanga	92
	325

From a study of the table given immediately below, and the figures shown under Dysentery on page 15, it is obvious that the source of the incidence is intimately associated with the labour forces employed in the areas mentioned.

DISEASES OF THE DIGESTIVE SYSTEM : 1925–1929 INCLUSIVE.

	1925.			1926.			1927.			1928.			1929.		
	Cases.	Deaths.	C.M. per mille.	Cases.	Deaths.	C.M. per mille.	Cases.	Deaths.	C.M. per mille.	Cases.	Deaths.	C.M. per mille.	Cases.	Deaths.	C.M. per mille.
Arusha	1,004	3	2·89	1,416	1	0·70	3,812	14	3·67	3,602	12	3·33	3,627	31	8·54
Dar-es-Salaam	3,712	1	0·26	3,035	5	1·64	4,328	19	4·36	4,354	30	6·88	4,236	39	9·20
Kilosa	522	4	7·66	415	1	2·40	2,074	11	5·30	1,294	19	53·20	1,854	40	21·57
Morogoro	1,032	4	3·87	1,388	13	9·29	1,408	52	36·93	1,905	99	51·96	1,584	68	42·92
Tabora	2,295	13	5·66	2,002	14	6·99	2,375	11	4·63	2,555	15	5·87	2,367	19	8·02
Tanga	2,467	8	3·24	3,789	4	1·05	5,370	14	2·60	4,464	50	11·20	3,850	92	23·89

C.M. = Case Mortality.

Ankylostomiasis.—	1927.	1928.	1929.
Cases	5,078	26,804	29,966
Deaths	121	202	248

Of the 1928 and 1929 figures 8,410 and 8,054 were treated at hospitals, see No. 115, Tables V and VI, page 241, the remainder in the districts.

Schistosomiasis.—	1927.	1928.	1929.
Cases	1,288	1,938	2,352

It is proposed during the forthcoming year to introduce Fouadin for the treatment of Schistosomiasis. The disease is in particular evidence in children and would appear to confer a degree of immunity against reinfection.

Diseases of Skin and Cellular Tissue.—	1927.	1928.	1929.
Cases	47,885	47,586	44,111
Deaths	55	72	68
Percentage of cases to total cases	12·08	11·73	11·14
Percentage of deaths to total deaths	5·54	5·83	4·21

Affections Produced by External Causes.—

	1927.	1928.	1929.
Burns (by fire)	1,807	1,095	1,175
Burns (other than by fire)	227	243	214
Wounds (by cutting or stabbing instruments)	6,426	8,455	4,904
Wounds (by fall)	8,894	6,695	3,588
Wounds (in mines and quarries)	817	154	56
Wounds (by machinery)	1,322	691	1,542
Wounds (*e.g.*, railway accidents, etc.)	536	157	143
A—Dislocations	53	100	133
B—Sprains	996	1,372	1,504
C—Fractures	367	414	520
Other injuries	12,746	13,371	15,087
Other affections produced by local causes	2,587	1,628	2,437
Cases	36,778	34,375	31,303
Deaths	97	96	90

(2) Communicable Diseases.

Anthrax.—Seventeen cases and four deaths occurred in the usual endemic areas, the principal of which is Singida.

Acute Poliomyelitis.—Two cases with one death were returned, one from Dar-es-Salaam, the other from Tanga.

Epidemic Cerebro-Spinal Meningitis.—	1927.	1928.	1929.
Cases	8	9	12
Deaths	6	6	12

An unusually high mortality.

Chickenpox.—	1927.	1928.	1929.
Cases	449	381	401
Deaths	1	—	—

With the exception of 47 cases at Arusha, the incidence was chiefly in the Mahenge, Iringa and Tabora Provinces.

Dengue.—	1927.	1928.	1929.
Cases	21	10	4
Deaths	1	—	—

All four cases occurred at Lindi.

Diphtheria.—	1927.	1928.	1929.
Cases	1	4	2*
Deaths	—	—	—

Dysentery.—See the Deputy Director of Sanitary Service's report on page 37, and remarks under the heading Digestive System on page 14.

	1927.	1928.	1929.
Amœbic	639	577	798
Bacillary	248	225	201
Unclassified or due to other causes	450	710	597

* Remaining from previous year.

Dysentery.

(*a*) *Amœbic.*

—	1925.		1926.		1927.		1928.		1929.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Arusha	45	4	73	—	102	2	65	2	119	2
Dar-es-Salaam (Native Hospital)	13	—	31	—	6	—	7	—	4	—
Kilosa	31	5	62	9	32	3	43	9	6	—
Morogoro	—	—	32	1	41	9	97	12	206	73
Tabora	18	1	7	—	1	—	7	—	11	—
Tanga	8	—	24	—	14	—	69	—	75	1

(*b*) *Bacillary.*

Arusha	—	—	—	—	—	—	4	2	—	—
Dar-es-Salaam (Native Hospital)	20	—	3	—	40	—	50	—	71	3
Kilosa	3	1	1	—	17	5	12	7	2	—
Morogoro	3	—	59	4	11	1	14	1	4	1
Tabora	—	—	1	—	2	—	—	—	—	—
Tanga	2	—	1	—	1	—	3	—	13	2

(*c*) *Unclassified.*

Arusha	—	—	—	—	—	—	2	—	24	3
Dar-es-Salaam (Native Hospital)	3	—	—	—	74	—	7	1	21	—
Kilosa	2	—	7	—	59	5	95	6	125	28
Morogoro	105	6	45	2	19	1	70	10	77	—
Tabora	—	—	3	—	—	—	16	2	45	1
Tanga	—	—	—	—	—	—	—	—	—	—

Case Mortality per mille. of Amœbic, Bacillary and Unclassified Dysentery during the Five Years 1925–1929.

	1925.	1926.	1927.	1928.	1929.
Arusha	88·8	—	19·6	56·3	34·9
Dar-es-Salaam	—	—	—	15·6	31·2
Kilosa	166·6	128·5	120·3	146·6	210·5
Morogoro	55·5	51·4	154·9	110·6	257·8
Tabora	55·5	—	—	86·9	11·7
Tanga	—	—	—	—	34·0

Encephalitis Lethargica.—One case.

Malaria and Blackwater.—

Malaria—	1927.	1928.	1929.
Cases	29,673	33,731	30,104
Deaths	40	47	49

Notice is drawn to pages 86–88 of Dr. Mackay's researches relating to Anopheline breeding at Mwanza, and pages 68–70 on the preventive measures against Anopheline reservoirs adopted by Dr. Steel at Kigoma.

Blackwater Fever.—

	1927.	1928.	1929.
Cases	72	67	88
Deaths	16	14	27

There were 88 cases of Blackwater Fever, with 27 deaths, distributed as follows :—

	Cases.	Deaths.
European officials	3	—
European general population	35	13
Native officials (including Asiatics)	10	4
Native general population (including Asiatics)	40*	10
	88	27

It is noteworthy that no less than 11 cases, with 4 deaths, occurred among African patients ; 9 of whom were Wachagga and 2 Masai. Reference should also be made to Dr. Harkness' report on page 202.

It is regrettable that quinine prophylaxis, and protection against anopheline mosquitoes by the wearing of mosquito boots, is rarely adopted by the inhabitants of the larger towns.

Mumps.—

	1927.	1928.	1929.
Cases	115	78	111

Plague.—See the Deputy Director of Sanitary Service's report on page 37.

Relapsing Fever.—See the Deputy Director of Sanitary Service's report on page 35.

	1927.	1928.	1929.
Cases	273	312	354
Deaths	5	1	10

Tabora returned 63, Iringa 28, Kigoma 30, Mahenge 32, and Mwanza 38. Kigoma, Tabora and Mwanza are old endemic centres. Iringa and Mahenge are the first medical stations on the main labour routes, from Tukuyu and Songea. Only 8 cases with 1 death occurred among the European population.

Smallpox and Vaccination.—See the Deputy Director of Sanitary Service's report on page 36.

Smallpox.—

	1927.	1928.	1929.
Cases	84	26	6

There were 322,702 vaccinations performed during the year, making a total of 1,730,997 for the nine years 1921–1929.

Trypanosomiasis.—See the Sleeping Sickness Officer's report on page 132.

The situation in the old foci in Mwanza, Ufipa and South Tabora has improved further. At Kahama an epidemic of somewhat larger proportions than is usual for Rhodesiense sleeping sickness, has held throughout the year. Reference should be made to page 137, where the subject is fully dealt with by the Sleeping Sickness Officer.

Funds have been provided for opening a Research Station, in charge of a Director, assisted by a trained Protozoologist, for the biological study of certain species of trypanosomes, at Tinde. This centre is situated in a cattle country which, while within easy distance of the sleeping sickness and fly areas, should present no danger of natural infection to animals maintained for experimental work.

Tuberculosis.—See also table, page 43, showing the incidence of tuberculosis, the Tuberculosis Medical Officer's report, notes by Dr. Graham, on the incidence of tuberculosis in the Dodoma district, and Dr. Dye on pages 141, 189 and 184 respectively.

The total number of in- and out-patients treated at the various hospitals, including those returned from the Kibongoto Tuberculosis Settlement and the Moshi-Pare area, are shown below :—

Total Cases and Deaths for the Territory.—

	1926.	1927.	1928.	1929.
Cases	444	888	1,393	1,084
Deaths	81	72	110	120

Although there is an apparent reduction in the figures for 1929, this is of no moment, for the Tuberculosis Medical Officer was away on home leave for several months of the year.

* Including 1 case remaining from the previous year.

During 1929 an opportunity was offered of conversing with Professor Kleine and Dr. Fischer, of the Berlin Mission, who were kind enough to call at my office, and I was able to give them a brief résumé of the objects and reasons of our survey of the Moshi-Pare area, such as has been recounted in my Annual Medical Reports for the years 1924 and 1928. Subsequent investigations undertaken by Dr. Fischer in the Ukinga mountains, which lie in a remote part of the country to the north-east of Lake Nyasa in the Tukuyu district, where he was energetic enough to examine some numbers of children and adults, using the von Pirquet test, has revealed that approximately 3 per cent. of the infants, 35 per cent. of the children, and 75 per cent. adults reacted in a positive manner. This finding confirms the view that I have held for some time, that there is existent in many parts of Eastern Africa an old-standing wide-ranged "tuberculosis-bearing belt," which lies at an altitude of between 4,500 to 6,000 feet above sea-level, a region of moderately heavy rainfall, populated by a cattle-owning indigenous people. A sum of £7,580 has been granted by the Colonial Development Board for research and investigation, by an expert clinician and a bacteriologist, into the tuberculosis situation in the Territory, and their work can hardly fail to throw light on the epidemiology of tuberculosis generally.

Yaws and Syphilis.—For the first time during the last six years, during which a widespread campaign against Yaws has been sustained, have the figures indicated that we have passed the peak, and although I am confident that the returns as a whole for future years will show a decreasing progression, the figures for 1930 will serve as a useful indicator for the purpose. There are now 100 treatment centres from which returns are received, an increase of 10 over the previous year.

The following table shows the total numbers dealt with during 1929.

Station.	Yaws.	Syphilis.	Station.	Yaws.	Syphilis.
Arusha	2,446	186	Brought forward	49,340	5,723
Kibaya	250	86	Kilwa	3,190	916
Mbulu	103	272	Kibata	1,274	28
Bagamoyo	2,210	48	Liwale	568	18
,, District	1,967	86	,, S.S. Area	398	2
Bukoba	1,922	2,372	Kondoa-Irangi	1,214	253
Biharamulo	2,616	623	Mkalama	2,719	51
Dar-es-Salaam	5,138	41	Lindi	6,035	71
*Kiserawe	160	—	*Luatala	1,962	7
*Minaki	280	72	*Lulindi	2,067	24
Mafia	241	87	*Masasi	1,447	11
Maneromango	97	—	Mikindani	6,717	199
Utete	7,659	5	*Ndanda	542	2
Dodoma	106	164	*Namagano	449	2
*Berega	8	9	*Newala	5,206	185
*Kongwa	6	2	*Saidi Mambo	700	82
*Kilimatinde	3	14	Tunduru	518	25
Manyoni	42	22	Lushoto	114	66
Mpwapwa	178	57	Mahenge	985	7
Singida	305	155	,, District	773	21
Iringa	226	65	*Ifakara	1,534	1,358
Malangali	144	65	*Mkasu	274	88
Njombe	236	15	*Mpanga	202	10
*Tosamaganga	216	51	*Sofi	420	119
Kasanga	880	264	Morogoro	539	127
*Karema	68	85	Kilosa	1,198	57
Kigoma	3,713	200	Kisaki	633	262
Kasulo	8,058	178	*Mhonda	452	16
,, District	1,246	—	†Ngerengere	581	9
Kibondo	7,402	288	Moshi	1,752	216
Ujiji	1,414	211	*Kilema	72	36
Carried forward	49,340	5,723	Carried forward	93,875	9,991

Station.	Yaws.	Syphilis.	Station.	Yaws.	Syphilis.
Brought forward ..	93,875	9,991	Brought forward ..	109,723	23,655
Mwanza	3,519	3,414	Tanga	1,148	235
Ikizu	85	59	,, District	1,162	136
Maswa	73	119	*Bombwera	454	75
Musoma	929	698	*Gomba Sisal Estate ..	18	20
Ukerewe	448	182	*Kibosho	421	21
Namanyere	53	45	*Kingoi	232	36
Pangani	677	70	*Korogwe	370	1,088
Handeni	32	153	*Kwa Mkono	44	105
Songea	871	607	*Mazila	219	34
Tabora	1,452	1,973	*Mkuzi	1,495	27
*Ipole	36	509	*Msalabani	1,057	78
Kahama	402	234	Rombo	24	5
,, District	4,939	1,722	*Tongwe	292	26
*Lububu	157	329	Tukuyu	225	84
Nzega	771	667	*Itete	226	4
*Sekonge	51	344	Mbeya	61	50
Shinyanga	1,291	2,171	Mwaya	9,248	78
*Usoke	40	358			
Ushirombo	22	10			
Carried forward ..	109,723	23,655	Total	126,419	25,757

* Missions. † Ngerengere Sisal Estates.

We are indebted to the undermentioned Missions for work undertaken on our behalf with drugs and equipment supplied by the medical department :—

Missions.	Yaws.	Syphilis.
Universities Mission to Central Africa—		
Dar-es-Salaam Area	280	72
Lindi Area	11,831	311
Moshi Area	421	21
Tanga	4,181	1,489
Church Missionary Society—		
Dodoma	17	25
Berlin Mission—		
Dar-es-Salaam	160	—
Tukuyu	226	4
Moravian Mission—		
Tabora	284	1,540
Holy Ghost Fathers—		
Morogoro	452	16
Moshi	72	36
White Fathers—		
Karema	68	85
Capuchin Fathers—		
Mahenge	2,228	1,565
Swiss Benedictine Fathers—		
Lindi	542	2
Italian Fathers of the Consolata—		
Iringa	418	61
	21,180	5,227

During the past six years 568,830 cases of Yaws have been treated in the Territory ; the totals, by years, are tabulated below :—

Figures for the Six Years 1924–1929.

Year.	Yaws.	Increase.	Decrease.	Syphilis.	Increase.	Decrease.
1924	20,750	—	—	4,348	—	—
1925	75,689	54,939	—	11,829	7,481	—
1926	97,807	22,118	—	17,483	5,654	—
1927	120,374	22,567	—	20,810	3,327	—
1928	127,791	7,417	—	25,425	4,615	—
1929	126,419	—	1,372	25,757	332	—
Totals	568,830	—	—	105,652	—	—

TABLE SHOWING TOTAL CASES, PERCENTAGES OF GROUPS TO TOTAL CASES TREATED, DEATHS AND PERCENTAGE OF DEATHS TO TOTAL NUMBER OF DEATHS.

	Cases.			Deaths.			Percentage to total number of cases treated.			Percentage of deaths to total number of deaths.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
Epidemic, endemic and infectious diseases	159,091	150,500	140,484	256	334	558	40·12	37·10	35·49	25·81	27·08	34·55
General diseases	5,183	5,731	6,206	59	51	42	1·31	1·40	1·57	5·95	4·14	2·60
Diseases of the nervous system	3,298	3,285	2,127	34	43	36	0·83	0·81	0·54	3·43	3·49	2·23
,, ,, organs of vision	15,936	19,789	21,284	1	1	—	4·02	4·88	5·38	0·10	0·08	—
,, ,, ear and mastoid sinus ..	4,932	6,023	5,954	1	1	—	1·24	1·50	1·50	0·10	0·08	—
,, ,, circulatory system ..	1,349	1,591	1,334	15	18	26	0·34	0·40	0·33	1·51	1·46	1·61
Acute and chronic bronchitis	34,692	33,318	30,427	10	3	—	8·75	8·22	7·69	1·01	0·24	—
Lobar and broncho-pneumonia	855	1,264	1,199	125	186	221	0·21	0·31	0·30	12·60	15·08	13·68
Other diseases of the respiratory system..	4,734	6,509	8,550	14	29	29	1·19	1·61	2·16	1·41	2·35	1·80
Caries and pyorrhœa	8,350	9,635	10,033	—	1	—	2·10	2·38	2·53	—	0·08	—
Diarrhœa and enteritis	8,407	8,200	7,437	79	57	117	2·12	2·02	1·88	7·96	4·62	7·24
Ankylostomiasis	5,078	8,410	8,054	121	202	248	1·28	2·07	2·03	12·20	16·39	15·36
Other diseases of the digestive system ..	44,640	52,118	56,800	50	48	60	11·26	12·85	14·35	5·04	3·90	3·72
Diseases of the genito-urinary system ..	4,150	5,137	5,553	34	26	41	1·05	1·24	1·40	3·43	2·11	2·54
Ulcers	16,303	25,574	24,516	25	23	29	4·11	6·31	6·19	2·52	1·87	1·80
Scabies	11,449	8,799	7,228	—	—	—	2·90	2·17	1·83	—	—	—
Other diseases of skin and cellular tissue	20,133	13,213	12,367	30	49	39	5·07	3·26	3·12	3·02	3·98	2·41
Diseases of bones and organs of locomotion	7,739	8,056	9,490	5	4	11	1·95	1·98	2·40	0·50	0·32	0·68
Affections produced by external causes ..	36,778	35,275	31,303	96	95	90	9·28	8·69	7·91	9·68	7·70	5·57
Ill-defined and other diseases	3,473	3,231	5,558	37	62	68	0·87	0·80	1·40	3·73	5·03	4·21
	396,570	405,658	395,904	992	1,233	1,615	100·00	100·00	100·00	100·00	100·00	100·00

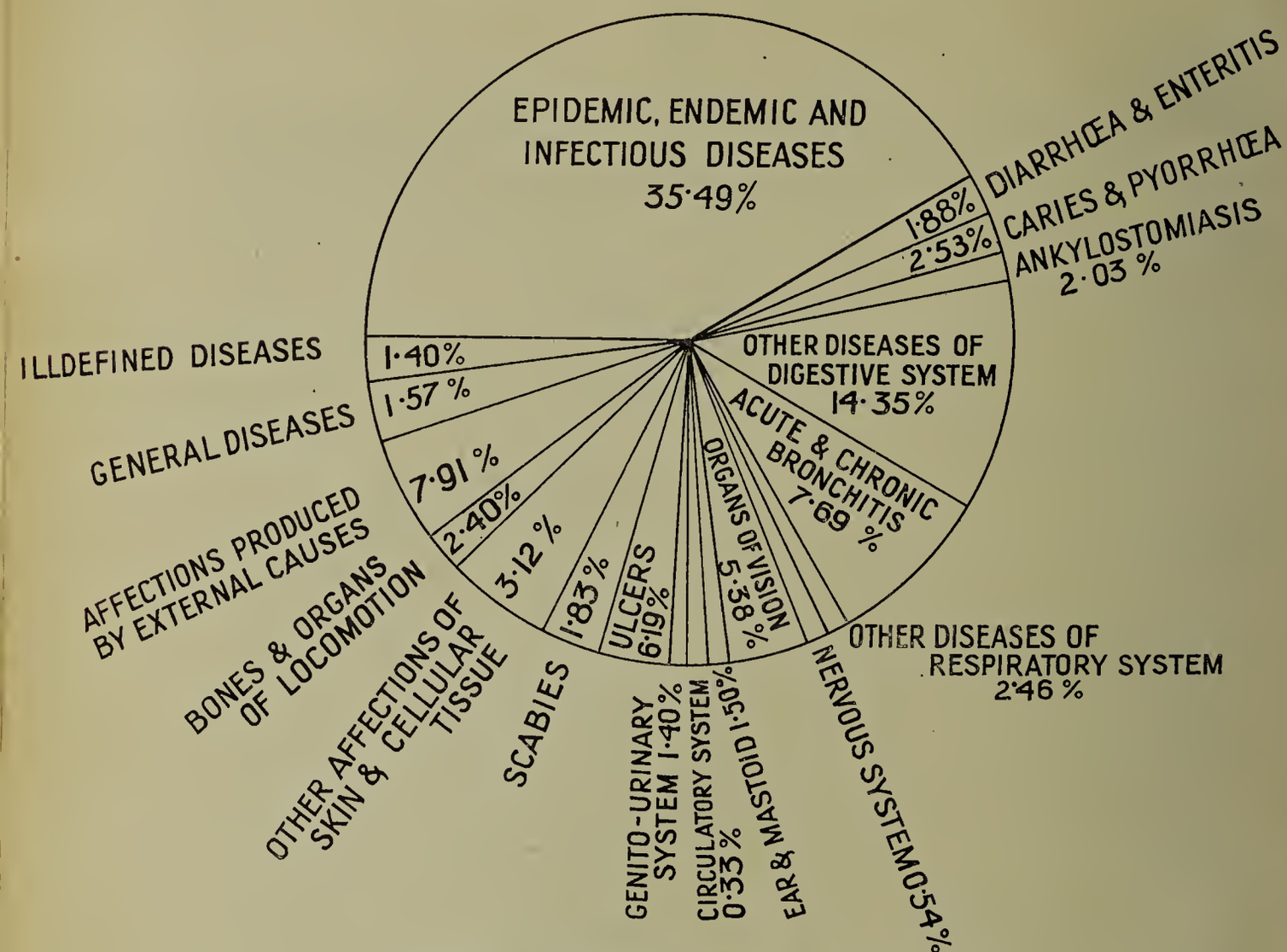
SURGICAL OPERATIONS PERFORMED DURING 1929. THE FIGURES REPRESENT THE NUMBER OF OPERATIONS CONDUCTED WITH OR WITHOUT GENERAL ANÆSTHETIC.

BONES, OPERATION :	
Fractures, simple	238
,, compound	26
Osteotomy	1
Resection	35
Others (including unclassified)	16
CHEST, OPERATIONS ON :	
Breast abscess, incision of	9
Removal of breast	2
Thoracotomy	7
LAPAROTOMY :	
Abdomen, penetrating wound of	8
Abscess of liver, laparotomy-hepatotomy	2
,, ,, aspiration	4
Appendectomy with local peritonitis	16
Exploratory	4
Fibroids	5
Gastro-enterostomy	2
Ovarian cystectomy	2
Paracentesis abdominalis	8
Others (including unclassified)	19
OBSTETRICAL :	
Abortion	2
Births, forceps operations	17
,, abnormal presentations	7
,, Ceasarian section	2
Repairs of perineum	1
Others (including unclassified)	23
GENITO-URINARY TRACT :	
Circumcisions	189
Curettage uteri	9
Hæmatocele	6
Hydrocele, single, radical cure	348
,, double, radical cure	52
Orchidectomy	31
Urethrotomy, external	20
Others (including unclassified)	45
HERNIOTOMY :	
Inguinal, single	279
,, double	1
Femoral	3
Strangulated	17
Others (including unclassified)	2
ADENECTOMY :	
Cervical	4
Others (including unclassified)	7
Carried forward	1,469

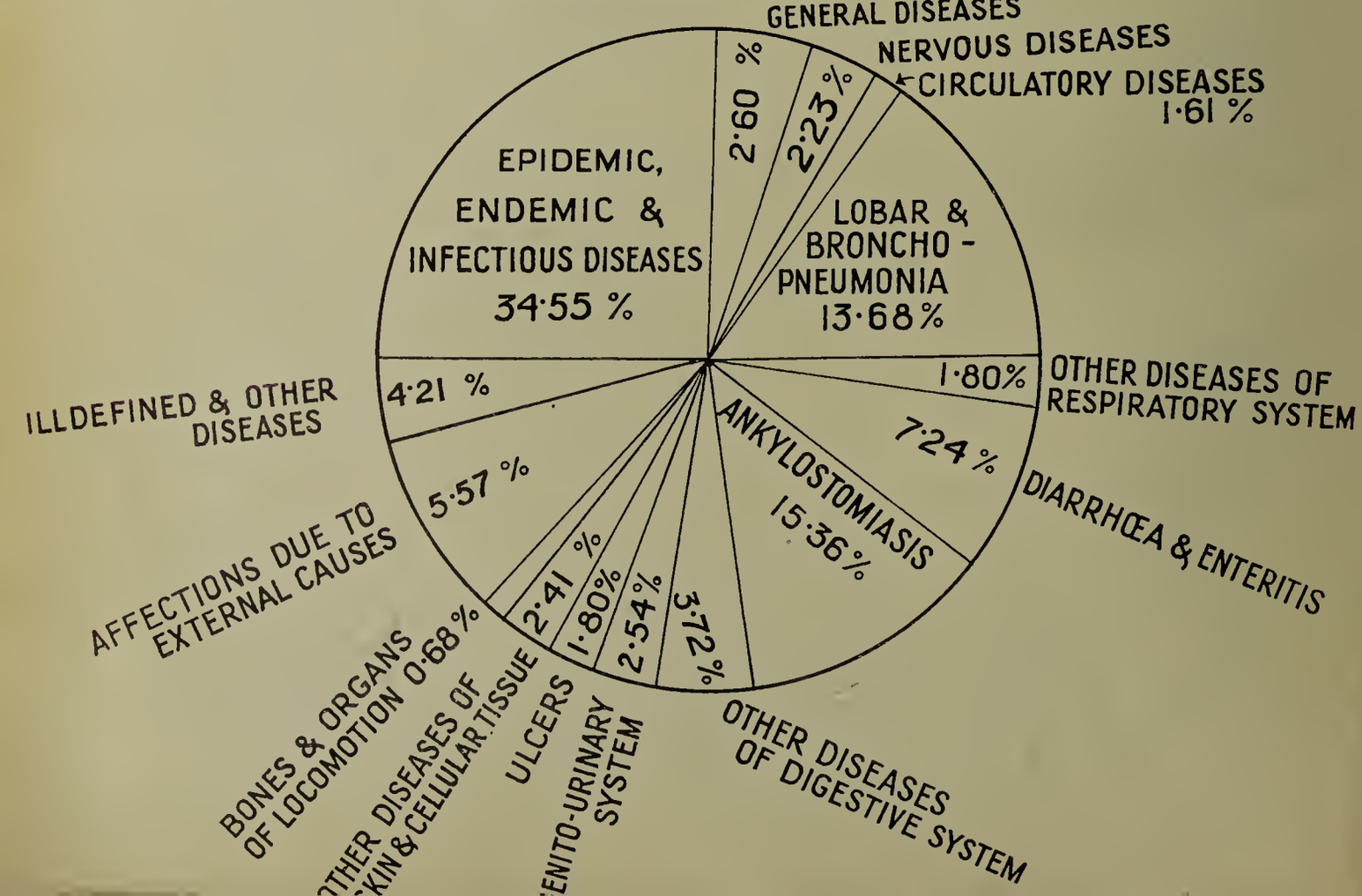
Brought forward	1,469
AMPUTATIONS :	
Hand	5
Arm	8
Leg	28
Foot	3
Digits	43
Thigh	4
Unclassified	10
JOINTS, OPERATION ON :	
Reduction of dislocation	36
Others (including unclassified)	23
MUSCLES AND TENDONS, OPERATIONS ON :	
Tenotomy	8
Others (including unclassified)	21
RECTUM, OPERATIONS ON :	
Fistula in ano	1
Hæmorrhoids, external	7
,, internal	12
Others (including unclassified)	1
MISCELLANEOUS :	
Abscess, treatment of	640
Aneurism	3
Cysts	24
Elephantiasis, treatment of	175
Hydatid cyst	1
Neoplasms, excision of, benign	78
,, ,, malignant	19
Skin graft	18
Tooth extractions	665
Ulcers, treatment of	169
Wounds, gunshot	2
,, others	605
Various other minor operations	303
Others (including unclassified)	39
EAR, OPERATIONS ON :	
Mastoid operations	6
EYE, OPERATIONS ON :	
Cataract, extraction of	152
Enucleation	9
Lid, operations	25
Others (including unclassified)	55
NOSE AND THROAT, OPERATIONS ON :	
Tonsillectomy	3
Others (including unclassified)	20
TOTAL	4,690

Although there was an apparent diminution in the total number of operations performed during 1929, as compared with the previous year, this is accounted for by the omission of operations performed without a general anæsthetic in the returns from several of the stations. There has, however, been a satisfactory increase in the number of certain classes of useful major and other operations to the relief of incapacitating conditions.

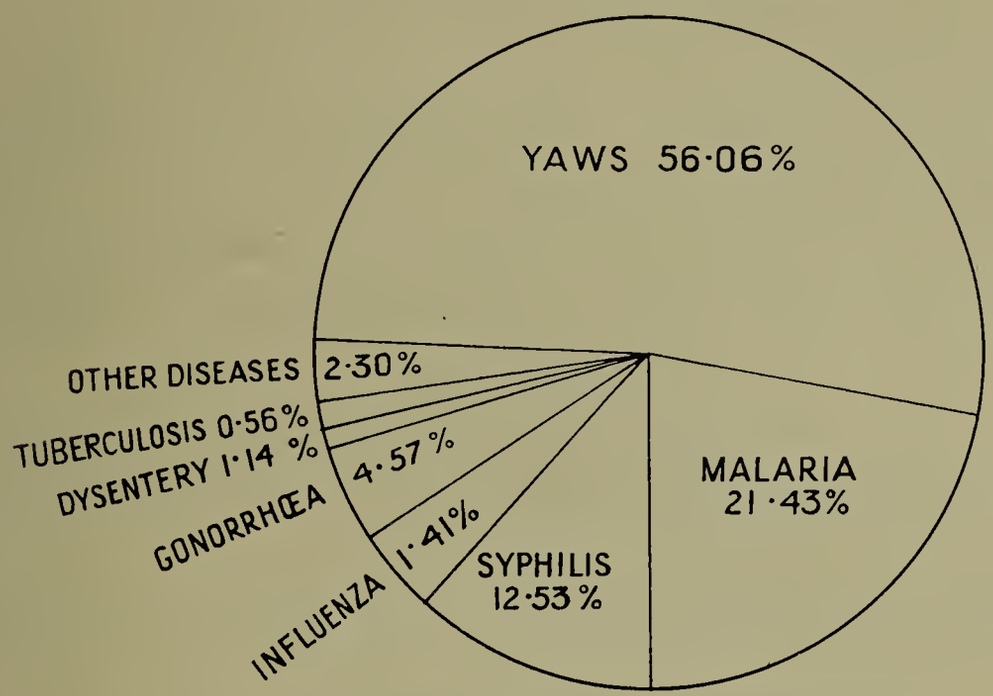
PROPORTION OF EPIDEMIC, ENDEMIC, SYSTEMIC, AND OTHER DISEASES SHEWN AS PERCENTAGES OF TOTAL CASES TREATED AT HOSPITALS AND DISPENSARIES.



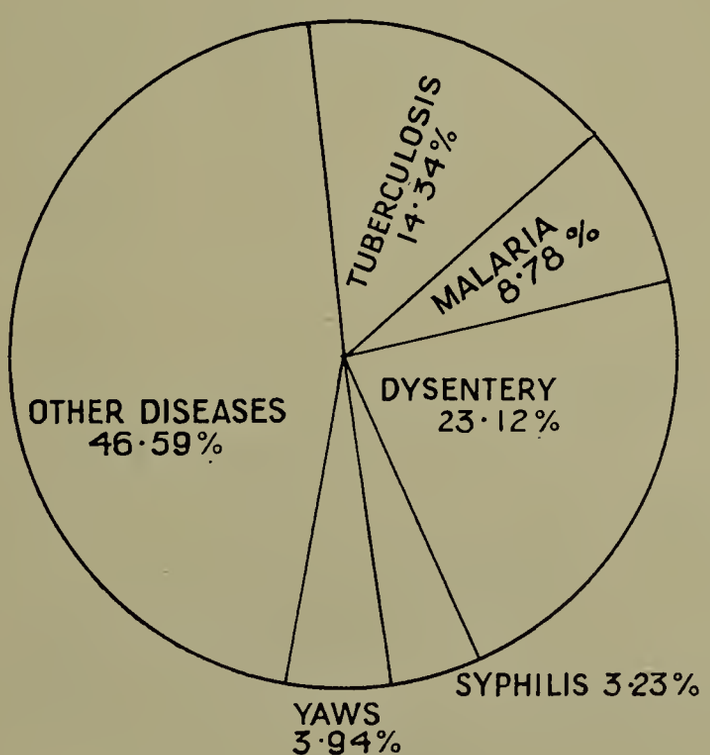
TOTAL INCIDENCE – 395904



PROPORTION IN PERCENTAGES OF EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES, IN- AND OUT-PATIENTS, TREATED AT HOSPITALS AND DISPENSARIES.



TOTAL INCIDENCE-99990



TOTAL DEATHS – 558

	1927.	1928.	1929.
Laparotomy	24	46	70
Bone operations	97	116	316
Hydrocele	246	261	400
Herniotomy	165	213	302
Eye operations other than cataract ..	19	13	89
Cataract	9	31	152
Elephantiasis	92	98	175

There is a wide field for operative work in Tanganyika. Hernia and elephantiasis are extensively distributed, especially in the coastal belt and the areas bordering Lake Victoria Nyanza ; eye diseases and cataract occur particularly in the open regions of higher altitude, *i.e.*, the Dodoma, Singida, Mkalama and Arusha districts : Genito-urinary surgery, stricture and fistula have a high incidence in the Bukoba Province. Surgical work could therefore be expanded to a great degree were more staff available.

Excellent work was done at Mwanza, where 417 operations were performed.

(b) Vital Statistics.

(1) General Native Population.

The most recent estimate of the population of the Territory is computed at 4,740,726. No reliable statistics relating to birth, death and infant mortality rates are available at present.

(2) General European Population.

Acknowledgment is made to the Registrar-General of Births and Deaths for a return of the registered deaths, a total of 48, which are summarised as follows :—

Causes of Deaths in Europeans during 1929.

(*Classified according to the Manual of the International List of Causes of Deaths*, 1926.)

I.—General Diseases.

	Age.	Nationality.	Place of Death.
1. Malaria, cerebral	4 months	British	Dar-es-Salaam.
2. ,, ,, ...	10½ ,,	,, ...	Kigoma.
3. ,, and cardiac failure	47 years	,, ...	Dar-es-Salaam.
4. ,, ,, ,, ...	27 days	German	Mwanza.
5. Blackwater fever	45 years	British	Dar-es-Salaam.
6. ,, ,, ...	47 ,,	,, ...	Mwanza.
7. ,, ,, ...	30 ,,	,, ...	Morogoro.
8. ,, ,, ...	40 ,,	German	,,
9. ,, ,, ...	39 ,,	British	Dodoma.
10. ,, ,, ...	34 ,,	German	Kigoma.
11. ,, ,, ...	35 ,,	,, ...	Bagamoyo.
12. ,, ,, ...	29 ,,	British	Arusha.
13. ,, ,, ...	45 ,,	,, ...	Bukoba.
14. ,, ,, ...	47 ,,	Greek	Singida.
15. Typhoid	39 ,,	British	Dar-es-Salaam.
16. ,, and malaria	28 ,,	,, ...	,,
17. General septicæmia	37 ,,	Hollander	Mwanza.

II.—General Diseases (not Included above).

18. Cancer larynx	34 years	German	Dar-es-Salaam.
19. ,, mammary gland	41 ,,	Dutch (S.A.)	Arusha.

III.—Diseases of Nervous System and Sense Organs.

20. Convulsions	2½ days	British	Moshi.

IV.—Diseases of the Circulatory System.

21. Aortic aneurism, rupture	38 years	British	Dar-es-Salaam.
22. Myocardial degeneration	55 ,,	,, ...	Usambara.

V.—Diseases of the Respiratory System.

23. Chronic bronchitis, emphysema and cardiac failure	41 years	British	Dar-es-Salaam.
24. Broncho-pneumonia	52 ,,	German	Mwanza.
25. ,, ,, ...	2⅓ ,,	,, ...	Kahama.
26. Pneumonia	43 ,,	,, ...	Tabora.
27. Double pneumonia	43 ,,	Swedish	Mbeya.
28. Abscess of right lung and relapsing fever	40 ,,	German	Moshi.
29. Double pneumonia	70 ,,	British	Kigoma.
30. Pneumonia	38 ,,	,, ...	Morogoro.

(2) General European Population—*continued.*

Causes of Deaths in Europeans during 1929—*continued.*

VI.—Diseases of the Digestive System.

		Age.	Nationality.	Place of Death.
31.	Enteritis, acute	4 years	British	Moshi.
32.	,, ,,	30 ,,	,,	Bukoba.
33.	Septic tonsillitis	43 ,,	,,	Dar-es-Salaam.

VII.—Non-Venereal Diseases of Uro-Genital System and Annexa.

34.	Chronic nephritis	48 years	British	Dar-es-Salaam.

VIII.—The Puerperal State.

35.	Puerperal septicæmia	25 years	British	Dodoma.

XII.—Diseases of Infancy.

36.	Premature birth	8 hours	British	Dar-es-Salaam.

XIII.—Old Age.

37.	Myocardial failure	67 years	British	Iringa.

XIV.—External Causes.

38.	Fractured spine (accident)	38 years	British	Iringa.
39.	Narcotic poisoning	25–30 years	Norwegian	,,
40.	Found drowned	45 years	Greek	Dar-es-Salaam.
41.	Wounds by elephant	40 ,,	British	Tabora.
42.	Accident, mechanical	33 ,,	,,	,,
43.	Suffocation, accidental	1½ ,,	German	Usambara.

XV.—Ill-Defined Causes.

44.	Cardiac syncope	63 years	British	Dar-es-Salaam.
45.	,, ,,	55 ,,	,,	Moshi.
46.	,, ,,	63 ,,	Dutch (S.A.)	Iringa.
47.	,, ,,	84 ,,	,,	Arusha.
48.	Suicide (unknown)	40 ,,	British	Kondoa.

(3) European Officials.

Deaths.—There were 7 deaths among European officials, 4 being due to disease, 1 to a hunting accident, 1 to a railway accident, and 1 to suicide.

	1927.	1928.	1929.
Malaria	1	—	—
Phthisis	1	—	—
Pneumonia	1	1	—
Accident—killed while hunting	1	—	1
Relapsing fever	1	—	—
Enteric fever	—	1	—
Cardiac syncope	—	1	—
Alcoholism (heart failure)	—	1	—
Bright's disease	—	1	—
Suicide	—	1	1
Chronic nephritis	—	—	1
Septic tonsillitis	—	—	1
Chronic meningitis	—	—	1
Chronic malaria and heart failure	—	—	1
Accident—railway	—	—	1
	5	6	7

Note :—One death (at Tanga) of a Naval rating from H.M.S. " Effingham " not included in above table. Cause of death, peritonitis following appendicitis and enteritis.

Invalidings.—Six European officials were invalided during the year, as compared with 13 and 5 during the two preceding years :—

	1927.	1928.	1929.
Blackwater fever	2	—	—
Alcoholism	—	1	—
Tuberculosis (pulmonary)	2	1	1
Neurasthenia	3	1	2
Tabes dorsalis	1	—	—
Fractured thigh	1	—	—
Epilepsy	1	—	—
Carried forward	10	3	3

(3) European Officials—*continued.*

Invalidings—continued.

	1927.	1928.	1929.
Brought forward	10	3	3
Chronic maxillary antrum abscess ..	1	—	—
Pyelitis	—	1	—
Chronic duodenal ulcer	1	—	—
Injuries—mauled by leopard	1	—	—
Rheumatoid arthritis	—	1	—
Heart disease	—	—	1
Ulcerated stomach	—	—	1
Uterine fibroids	—	—	1
	13	5	6

(4) Asiatic Officials.

Deaths.—There were 12 deaths among Asiatic officials, 9 being due to disease and 3 to accidents.

	1927.	1928.	1929.
Blackwater fever	7	4	4
Pneumonia	3	1	2
Cerebral malaria	3	—	—
Pulmonary tuberculosis	—	1	—
Cardiac disease	1	—	—
Cirrhosis of liver	1	—	—
Peritonitis	1	—	—
Erysipelas	1	—	—
Diabetes	—	1	—
Cellulitis	—	1	—
Broncho-pneumonia	—	—	1
Valvular disease of heart	—	—	1
Chronic malaria	—	—	1
Accident—motor car	—	—	2
Burns	—	—	1
	17	8	12

Invalidings.—Twenty Asiatic officials were invalided during the year.

	1927.	1928.	1929.
Blackwater fever	1	—	—
Pulmonary tuberculosis	2	3	—
Chronic gastric ulcer	1	—	—
Cerebral hæmorrhage	—	1	—
Chronic asthma	1	1	3
General weakness following spreading cellulitis	1	—	—
Pneumonia	1	—	—
Chronic malaria	1	1	—
Peripheral neuritis, chronic malaria and neurasthenia	1	—	—
Spastic paraplegia	1	—	—
Acute anterior poliomyelitis	—	1	—
Neurasthenia	—	1	—
General debility and fistula	—	—	1
Valvular disease of heart	—	—	1
Chronic bronchitis	—	—	1
Trachoma, pannus and corneal ulceration	—	—	1
Myocardial degeneration	—	—	1
Delusions and hallucinations	—	—	1
Asthmatic bronchitis	—	—	2
Mental derangement	—	—	1
Defective vision	—	—	2
Cystitis and dysuria	—	—	1
General debility and premature senility ..	—	—	1
Diabetes	—	—	1
Epilepsy	—	—	1
Chronic anæmia and senile debility ..	—	—	1
Mild dementia	—	—	1
	10	8	20

TABLE I.

Sick, Invalidings and Death Rates, European Officials, 1927, 1928 and 1929.

(For the three Principal Towns and the Whole Territory.)

—	Dar-es-Salaam.			Tabora.			Tanga.			Whole Territory.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
1. Total number of Officials Resident..	424	452	514	129	138	146	71	79	84	1,038	1,375	1,547
2. Average number Resident	283	309	332	78	80	83	58	70	76	756	851	942
3. Total number on Sick List	288	358	371	109	62	38	36	66	75	754	756	779
4. Total number of Days on Sick List..	2,365	2,616	2,854	821	420	225	319	491	444	5,972	5,407	5,520
5. Average daily number on Sick List ..	6·48	7·17	7·82	2·25	1·15	0·62	0·87	1·35	1·22	16·36	14·81	15·12
6 Percentage of Sick to average number Resident	2·29	2·32	2·36	2·88	1·44	0·75	1·50	1·93	1·61	2·16	1·74	1·61
7. Average number of Days on Sick List for each Patient	8·21	7·31	7·69	7·53	6·77	5·92	8·86	7·44	5·92	7·92	7·15	7·09
8. Average Sick Time to each Resident	8·36	8·47	8·60	10·49	5·25	2·71	5·50	7·01	5·84	7·90	6·35	5·86
9. Total number Invalided	8	5	5	2	—	—	1	—	—	13	5	6
10. Percentage of Invalidings to Total Resident	1·89	1·11	0·97	1·55	—	—	1·41	—	—	1·25	0·36	0·38
11 Total Deaths	2	2	4	—	2	2	—	—	—	5	6	7
12 Percentage of Deaths to Total Resident	0·47	0·44	0·78	—	1·44	1·37	—	—	—	0·48	0·44	0·45
13. Percentage of Deaths to average number Resident	0·71	0·65	1·20	—	2·50	2·41	—	—	—	0·66	0·71	0·74
14. Number of Cases of Sickness contracted away from Residence	—	—	—	11	—	1	—	—	—	47	41	22

Note :—One death of a Naval rating of H.M.S. "Effingham" at Tanga not included in above Table.

TABLE II.

Sick, Invalidings and Death Rates, Asiatic Officials, 1927, 1928 and 1929.

(For the three Principal Towns and the Whole Territory.)

	Dar-es-Salaam.			Tabora.			Tanga.			Whole Territory.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
1. Total number of Officials Resident..	780	848	888	294	328	254	93	110	149	1,591*	1,778*	1,838*
2. Average number Resident	642	742	735	230	200	193	87	95	125	1,251*	1,354*	1,390*
3. Total number on Sick List	673	1,069	739	434	518	580	228	153	373	1,847	2,259	2,171
4. Total number of Days on Sick List..	3,032	5,391	4,134	1,649	2,401	1,996	1,089	1,457	1,851	8,044	11,928	10,710
5. Average daily number on Sick List ..	8·31	14·77	11·33	4·52	6·58	5·47	2·98	3·99	5·07	22·04	32·68	29·34
6. Percentage of Sick to average number Resident	1·29	1·99	1·54	1·96	3·29	2·83	3·43	4·20	4·06	1·76	2·41	2·11
7. Average number of Days on Sick List for each Patient	4·51	5·04	5·59	3·79	4·64	3·44	4·78	9·52	4·96	4·36	5·28	4·93
8. Average Sick Time to each Resident..	4·79	7·27	5·62	7·16	12	10·34	12·52	15·34	14·81	6·43	8·81	7·71
9. Total number Invalided	7	6	12	—	1	1	2	1	6	10	8	20
10. Percentage of Invalidings to Total Resident	0·90	0·71	1·35	—	0·30	0·39	2·15	0·90	4·02	0·63	0·44	1·08
11. Total Deaths	3	4	7	6	1	2	1	2	1	17	8	12
12. Percentage of Deaths to Total Resident	0·38	0·47	0·78	2·04	0·30	0·78	1·08	1·82	0·67	1·07	0·44	0·65
13. Percentage of Deaths to average number Resident	0·47	0·54	0·95	2·61	0·50	1·03	1·15	2·11	0·80	1·36	0·59	0·86
14. Number of Cases of Sickness contracted away from Residence	—	—	—	—	—	—	—	—	—	2	8	12

* Approximate only. Accurate figures not available.

TABLE III.

Morbidity Rates for Malaria and Blackwater Fever amongst Officials—Dar-es-Salaam.

——	European Officials.									Asiatic Officials.								
	Total days off duty.			Days off duty for Malaria.			Days off duty for B.W. Fever.			Total days off duty.			Days off duty for Malaria.			Days off duty for B.W. Fever.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
January	118	213	281	20	82	48	—	—	—	221	421	547	35	254	265	—	26	—
February	117	217	174	37	58	35	—	—	—	223	283	275	37	164	154	—	6	—
March	212	215	140	50	65	—	—	—	16	214	224	283	106	126	72	—	8	—
April	276	127	215	116	29	26	—	—	27	277	232	386	182	143	192	—	—	—
May	260	230	233	152	38	61	—	—	—	361	614	500	252	400	95	—	8	—
June	254	311	258	95	96	60	—	—	—	353	804	262	215	542	78	23	—	5
July	147	193	175	42	86	51	—	—	—	199	489	429	54	351	38	10	14	38
August	132	126	261	14	27	44	—	—	—	192	349	308	40	178	59	—	—	—
September	207	221	246	21	43	16	—	—	—	160	502	246	50	258	40	—	—	—
October	218	228	232	24	38	6	—	—	—	72	453	280	58	219	53	—	—	—
November	341	265	274	15	25	15	—	—	—	303	537	348	47	267	31	—	—	—
December	188	270	365	29	36	64	—	—	—	359	483	270	71	204	13	—	—	—
Total	2,470	2,616	2,854	615	623	426	—	—	43	2,934	5,391	4,134	1,147	3,106	1,090	33	62	43

Percentage of days off duty for Malaria and Blackwater Fever to total days off duty—

1927	24·90
1928	23·81
1929	16·43

Percentage of days off duty for Malaria and Blackwater Fever to total days off duty—

1927	40·22
1928	58·76
1929	27·41

TABLE IV.

MORBIDITY RATES FOR MALARIA AND BLACKWATER FEVER AMONGST OFFICIALS—TABORA.

—	European Officials.									Asiatic Officials.								
	Total days off duty.			Days off duty for Malaria.			Days off duty for B.W. Fever.			Total days off duty.			Days off duty for Malaria.			Days off duty for B.W. Fever.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
January	23	17	3	11	—	—	—	—	—	63	226	209	34	57	114	12	—	—
February	64	29	31	14	18	1	—	—	—	87	189	268	53	106	170	18	—	13
March	33	110	44	1	18	3	—	—	—	115	143	178	45	42	89	—	32	6
April	58	71	17	4	33	—	—	—	—	56	169	130	11	100	58	4	22	—
May	78	64	32	36	38	5	—	—	—	197	133	140	164	51	64	9	11	7
June	87	25	18	48	13	11	28	—	—	174	293	216	103	200	86	26	55	21
July	92	21	2	34	—	—	31	—	—	238	245	107	62	151	56	82	23	—
August	88	9	—	6	2	—	1	—	—	152	204	132	41	87	45	26	16	—
September	87	13	17	23	3	—	—	—	—	85	198	144	34	62	33	—	—	—
October	99	17	24	36	7	9	—	—	—	155	238	114	42	85	45	—	—	—
November	60	32	14	20	8	—	—	—	—	185	198	172	33	65	74	—	—	—
December	52	12	23	22	3	—	—	—	—	141	165	186	32	59	60	—	—	—
TOTAL	821	420	225	255	143	29	60	—	—	1,648	2,401	1,996	654	1,065	894	177	159	47

Percentage of days off duty for Malaria and Blackwater Fever to total days off duty—

1927	38·37
1928	34·05
1929	12·88

Percentage of days off duty for Malaria and Blackwater Fever to total days off duty—

1927	50·42
1928	50·98
1929	47·14

TABLE V.

Morbidity Rates for Malaria and Blackwater Fever amongst Officials—Tanga.

——	European Officials.									Asiatic Officials.								
	Total days off duty.			Days off duty for Malaria.			Days off duty for B.W. Fever.			Total days off duty.			Days off duty for Malaria.			Days off duty for B.W. Fever.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
January	46	45	29	—	—	15	—	—	—	50	180	194	11	60	86	—	—	—
February	46	35	31	—	—	4	—	—	—	44	136	131	23	23	58	—	—	10
March	37	35	27	—	6	—	—	—	—	52	131	61	12	12	5	5	—	6
April	12	83	39	7	14	8	—	—	—	67	129	129	43	32	5	—	—	—
May	59	63	49	53	12	1	—	—	—	212	90	161	99	31	50	—	—	—
June	10	34	58	10	5	31	—	—	—	102	55	150	70	37	66	—	—	—
July	1	20	47	1	4	4	—	—	—	87	115	241	21	52	105	—	—	9
August	1	28	27	—	12	6	—	—	—	75	160	217	10	52	105	—	3	31
September	14	38	32	—	5	14	—	—	—	118	162	171	30	44	70	—	1	8
October	10	44	17	3	12	3	—	—	—	58	101	142	20	42	55	—	3	—
November	—	35	64	—	6	19	—	—	—	52	91	174	33	41	43	—	—	—
December	87	31	24	—	6	7	—	—	—	198	107	80	63	22	34	—	—	—
Total	323	491	444	74	82	112	—	—	—	1,115	1,457	1,851	435	448	682	5	7	64

Percentage of days off duty for Malaria and Blackwater Fever to total days off duty—

1927	22·91
1928	16·70
1929	25·22

Percentage of days off duty for Malaria and Blackwater Fever to total days off duty—

1927	39·55
1928	31·23
1929	40·30

(5) The Southern Brigade Headquarters, King's African Rifles.

1929.	Station.	6th Battalion.					2nd Battalion.
		Effective Strength each Month.	Average Daily Number of Sick.		Deaths.	Invalidings.	Daily Average Sick.
			In Hospital.	In Lines.			
January ..	Dar-es-Salaam ..	568	15·75	12·42	—	—	—
	Songea	168	2	6·6	—	—	—
	Arusha	104	7·25	3·25	—	—	—
	Mahenge	85	5·25	3·75	—	—	—
	Tabora	—	—	—	—	—	9·2
	Iringa	—	—	—	—	—	3·1
	Masoko	—	—	—	—	—	2·6
February ..	Dar-es-Salaam ..	554	11·75	11·62	—	1	—
	Songea	177	3	7·32	—	—	—
	Arusha	98	3·5	1·25	—	1	—
	Mahenge ..	90	4·75	2	—	—	—
	Tabora	—	—	—	—	—	9·6
	Iringa	—	—	—	—	—	3·3
	Masoko	—	—	—	—	—	1·9
March ..	Dar-es-Salaam ..	566	13·95	12·11	—	—	—
	Songea	190	4	7·13	—	1	—
	Arusha	88	1·6	1	—	—	—
	Mahenge	95	4·25	1·75	—	—	—
	Tabora	—	—	—	—	—	11·3
	Iringa	—	—	—	—	—	3·5
	Masoko	—	—	—	—	—	2·6
April ..	Dar-es-Salaam ..	551	11·75	7·91	—	2	—
	Songea	198	1·75	9·10	—	1	—
	Arusha	84	1·5	0·25	—	—	—
	Mahenge	89	3	1·2	—	—	—
	Tabora	—	—	—	—	—	10·5
	Iringa	—	—	—	—	—	2·9
	Masoko	—	—	—	—	—	1·1
May ..	Dar-es-Salaam ..	559	12·9	10·13	1 (*a*)	—	—
	Songea	201	1·8	7·20	—	—	—
	Arusha	100	0·8	0·4	—	—	—
	Mahenge	99	1·75	0·5	—	—	—
	Tabora	—	—	—	—	—	10·2
	Iringa	—	—	—	—	—	2·6
	Masoko	—	—	—	—	—	1·6
June ..	Dar-es-Salaam ..	568	12·65	8·88	—	—	—
	Songea	198	0·75	10·33	—	—	—
	Arusha	101	0·75	0·5	—	—	—
	Mahenge	72	1	2	—	1	—
	Tabora	—	—	—	—	—	8·8
	Iringa	—	—	—	—	—	2·1
	Masoko	—	—	—	—	—	1·9
July ..	Dar-es-Salaam ..	447	8·10	9·21	—	1	—
	Songea	197	1·5	9	—	—	—
	Arusha	169	2	1·5	—	—	—
	Mahenge	73	4·4	1	—	—	—
	Tabora	—	—	—	—	—	8·7
	Iringa	—	—	—	—	—	2·9
	Masoko	—	—	—	—	—	2

(5) The Southern Brigade Headquarters, King's African Rifles—*continued.*

1929.	Station.	6th Battalion.					2nd Battalion.
		Effective Strength each Month.	Average Daily Number of Sick.		Deaths.	Invalidings.	Daily Average Sick.
			In Hospital.	In Lines.			
August ..	Dar-es-Salaam ..	453	8·55	7·55	—	2	—
	Songea	178	1·2	6·70	—	2	—
	Arusha	167	3·8	3	—	—	—
	Mahenge	70	3	0·25	—	—	—
	Tabora	—	—	—	—	—	9·2
	Iringa	—	—	—	—	—	2·4
	Masoko	—	—	—	—	—	1·3
September	Dar-es-Salaam ..	395	7·25	9·35	—	—	—
	Songea	143	1·5	5·80 (*b*)	—	—	—
	Mahenge	75	1·75	0·25	—	—	—
	Arusha	155	4·25	2	—	—	—
	Tabora	—	—	—	—	—	10·1
	Iringa	—	—	—	—	—	2·5
	Masoko	—	—	—	—	—	1·6 (*c*)
October ..	Dar-es-Salaam ..	499	8·25	10·64	—	—	—
	Arusha	173	4·25	1	1 (*d*)	—	—
	Mahenge	100	3·4	1	—	—	—
	Tabora	—	—	—	—	—	11·7
	Iringa	—	—	—	—	—	2
November..	Dar-es-Salaam ..	483	17·2	13·56	—	1	—
	Arusha	171	10	2·4	—	—	—
	Mahenge	98	2	2·75	—	—	—
	Tabora	—	—	—	—	—	11·5
	Iringa	—	—	—	—	—	2·4
December	Dar-es-Salaam ..	516	8	14·52	—	—	—
	Arusha	162	7	1	—	—	—
	Mahenge	·96	3	1·6	—	—	—
	Tabora	—	—	—	—	—	10·5
	Iringa	—	—	—	—	—	2·8

(*a*) Carpenter—pneumonia.
(*b*) Station handed over to 1st K.A.R. 17.9.29.
(*c*) Station handed over to 1st K.A.R. 18.9.29.
(*d*) Askari—heart failure.

Recommendations.

The staff of European Sanitary Superintendents should be brought up to full strength. I have no other recommendations to make at present, for the following items are in the process of being initiated or elaborated :—

(*a*) Tuberculosis survey.
(*b*) Malaria survey.
(*c*) Trypanosomiasis research unit.
(*d*) Dar-es-Salaam drainage and sewerage scheme.
(*e*) Legislation for the provision of adequate medical treatment and the safeguarding of the health of the labourer.
(*f*) Plans have been prepared for the building of the New Sewa Hadji Hospital (£98,000) and the Medical Training School (£20,000) at Dar-es-Salaam.

III.—HYGIENE AND SANITATION.

REPORT BY DR. A. H. OWEN, DEPUTY DIRECTOR OF SANITARY SERVICE.

(a) General Review of Work done and Progress made.

While there are no events of outstanding importance to record, progress has been made during the year and the standard of sanitation throughout the Territory has been well maintained. The staff, sanctioned in the estimates for 1929/30, specifically to deal with Public Health work, was as follows :—

4 Senior Health Officers (one appointment had not been filled by the end of 1929).
9 Sisters and Health Visitors (for Maternity and Child Welfare work).
2 European Senior Sanitary Superintendents.
17 European Sanitary Superintendents.
2 Asiatic Sanitary Inspectors.
33 African Urban Sanitary Inspectors } All are trained
185 African District Sanitary Inspectors } vaccinators.
7 Vaccinators.

£15,000 for wages of Sanitary Labourers.

In addition, the following staff were seconded from the Medical side solely for Public Health work :—

8 Medical Officers acting as Senior Health Officers, Health Officers, Assistant Health Officers and Port Health Officers.
2 Sub-Assistant Surgeons.
1 Compounder.

The duties of the Government Entomologist and Analytical Chemist are largely concerned with Public Health work.

In those stations where a whole-time Health Officer is not available the supervision of the sanitation is carried out by the Medical Officer, assisted in some cases by a European Sanitary Superintendent.

The following increases of staff have been provisionally sanctioned from April, 1930 :—

1 Senior Health Officer.
8 European Sanitary Superintendents.
21 African District Sanitary Inspectors.

£300 for wages of Sanitary Labourers.

This increase of staff will allow of more efficient inspection of the work of the native inspectors and the provision of whole-time European supervision for the sanitation of some of the townships where a Health Officer is not stationed.

There are two other important subdivisions of the Medical Department intimately connected with the Public Health of the Territory. The first is the " Special Investigation " into the social life, customs, morbidity and mortality of the natives living in the Kahama district. The staff there is composed of :—

1 Medical Officer.
2 Health Visitors.
4 Sub-Assistant Surgeons.
African staff, including 20 ayahs.

The second is the Tuberculosis investigation being carried out by a Medical Officer and staff on the slopes of Kilimanjaro. Both these enquiries are reported on in other sections of this Annual Report and are mentioned here only because the result of their investigations must be an important factor in determining the future policy of the Sanitation branch of the Medical Department.

(1) *Preventive Measures.*

Mosquito and Insect-borne Diseases.

Malaria still provides a large proportion of the cases attending for treatment at the Government hospitals. The total number of patients suffering from this disease during 1929 was 30,104, a drop of 3,627 from the previous year. The deaths were 49, a rise of 2 over 1928; 4,476 malaria patients were admitted to hospital, giving a mortality rate of slightly under 1 per cent., a figure approximating to those for previous years. Anti-mosquito work has been carried out through the Territory so far as funds permit. Circulars have been issued and articles published in the Press, pointing out the necessity for the assistance of the general public, not only in the work of the prevention of mosquito breeding, but also in personal prophylaxis. The provision of an adequate system of surface drainage, together with a sewerage system, would do much to reduce the mosquito nuisance during the rainy season. It appears probable that funds will be available during 1930 to provide an expert to draw up a scheme for Dar-es-Salaam.

Blackwater Fever.—Eighty-eight cases, with 27 deaths, were reported during the year.

Sleeping Sickness.—See Sleeping Sickness Officer's report on page 132.

Yellow Fever.—No cases have ever been reported in the Territory. The possibility of the establishment of regular passenger aeroplane services from West to East to connect with the projected Cape to Cairo Imperial Airways service, causes some anxiety as to the possibility of infection being introduced into Eastern Africa.

Filariasis.—Only 94 cases were reported as having been treated in Government hospitals.

Dengue.—No outbreak of dengue occurred. The figures for the last three years are as follows:—

1927.	1928.	1929.
21	10	4

Relapsing Fever.—Ornithodorous moubata is common throughout the greater part of the Territory. The natives, however, appear to have acquired marked resistance to relapsing fever in those areas where the tick is present. No effective means of eradicating the pest from native dwellings has yet been found, but experiments with Cyanogas "A" powder will be tried when a supply has been obtained; 354 cases, with 10 deaths, were reported during the year—of these, 8, with 1 death, were amongst the European population.

Epidemic Diseases.

The whole Territory, with the exception of a small area in the extreme south-west, has been remarkably free from dangerous infectious disease during the year under review.

One case of smallpox was reported from each of the following districts: Kilosa, Mahenge, Njombe and Kahama. The increase during recent years in the European staff of the Administration and Medical Departments, together with the presence of African District Sanitary Inspectors and the establishment of Native Authorities with their Tribal Dressers, makes it very improbable that any extensive outbreak can escape detection, and the writer is of opinion that it can be definitely stated that the whole of the Territory, with the exception of the area referred to above, was practically free from smallpox during 1929.

During the latter part of 1928 smallpox was reported from the areas of Northern Rhodesia in the neighbourhood of the south-west border of this Territory. In February, 1929, cases of smallpox were reported from a small village in the Mbeya district, near the Rhodesian border. The total population was 16, and out of the 12 persons found infected none died. The district was put in quarantine and 3,062 of the inhabitants of the surrounding area were vaccinated. The local natives were of opinion that the disease was

introduced by a native who had recently returned from the Kasama district of Northern Rhodesia. No further cases occurred in the Mbeya district until the end of October, when three more natives became infected, one of whom died. In December one more case, also fatal, was reported. The total for the whole year in the Mbeya district was 16 cases, with 2 deaths.

The Rungwe district, which borders on Mbeya, became infected at the end of April, one case only being reported; one or two cases occurred each week up to the end of May, when the total reached seven, none of whom died. For a month the disease remained quiescent, but seven cases were reported during the last week in June, and a few new cases continued to occur each week until the total reached 49, with 3 deaths, by the end of October. The numbers of new cases now began to show an increase, and by the end of the year 158 cases, with 20 deaths, were reported. The Rungwe district is comparatively densely inhabited, having a population of 85 to the square mile, while Mbeya has only 5; consequently the danger of the disease becoming epidemic is greater. As a general rule, the natives in this area live in small collections of huts, separated from their neighbours by banana groves and other cultivation, and are not in such intimate contact as are natives who are concentrated into definite villages. This fact, together with the extensive vaccination campaign which has been carried out, probably accounts for the disease not becoming epidemic. The number of vaccinations performed during the year was 33,813 in Rungwe and 19,545 in Mbeya. Cases of smallpox were still occurring in Rungwe at the end of the year.

A report of vaccinations performed, compiled from the Station Reports, follows :—

Table showing Vaccinations Performed during 1929.

Provinces.	Primary Vaccinations.				Re-Vaccinations.			
	Total.	Number re-inspected.	Successful.	Unsuccessful.	Total.	Number re-inspected.	Successful.	Unsuccessful.
Bukoba	10,266	—	—	—	—	—	—	—
Central	55,985	53,896	46,162	7,706	4,918	4,375	2,809	1,450
Eastern	35,125	8,970	20,221	10,981	4,756	3,207	1,493	1,764
Iringa	72,455	52,775	46,627	13,411	5,564	4,223	3,218	1,222
Kigoma	25,773	10,660	8,404	5,492	4,651	2,072	1,116	937
Lindi	25,960	21,669	18,975	4,836	479	79	66	13
Mahenge	5,670	5,047	1,650	4,018	1,077	435	408	669
Mwanza	3,421	2,335	1,443	438	106	—	—	—
Northern	4,129	1,507	1,581	806	326	286	207	79
Tabora	69,493	44,000	32,096	13,898	1,284	3,342	4,474	1,848
Tanga	14,425	10,527	7,987	3,312	332	—	—	—
Total	322,702	211,386	185,146	64,898	23,493	18,019	13,791	7,982

Cerebro-spinal Meningitis.—A total of 10 cases with 6 deaths was reported from six separate districts; nowhere did the disease show any signs of becoming epidemic.

Plague.—No cases of plague were reported during 1929. A new railway has been sanctioned, which will leave the Central line at Manyoni and, passing through Singida, reach the foot of the Iramba Plateau at Kinyangiri. This line will traverse the endemic plague area surrounding Singida, and additional precautions will be necessary to prevent plague reaching the Central line and possibly the larger towns situated on that railway. The Railway Administration readily agreed to consult this department on the question

of the design of rat-proof godowns for the storage of grain, hides and other rat-attracting produce. Enquiries are also being made from authorities in England as to methods of disinfesting truck loads of produce, which methods can be put in force should plague again break out in the area served by this new railway.

Influenza.—Only one small outbreak of Epidemic Influenza was reported during the year ; 33 cases with no deaths occurred in the Mahenge district.

Chickenpox and other minor infectious diseases occurred in several districts of the Territory. In no case did these diseases give cause for anxiety.

TABLE SHOWING THE INCIDENCE OF DANGEROUS INFECTIOUS DISEASES DURING THE LAST FIVE YEARS, 1925–1929.

Year.	Smallpox.		Cerebro-spinal Meningitis.		Plague.		Influenza.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1925	1,388	466	6	3	44	27	692*	64
1926	22	—	8	4	6	6	1,552*	209
1927	84	8	7	6	13	10	—	—
1928	26	—	7	3	43	42	540	8
1929	178	22	10	6	—	—	33	—

* Total number not known, non-serious cases not being reported.

Enteric Fever.—Forty-four cases of enteric, 7 of para-typhoid A and 1 of B, and 5 type not defined, were reported, with 13 deaths.

Of the above, 22 occurred among Europeans, with 2 deaths.

	1927.	1928.	1929.
Cases	27	39	44
Deaths	6	4	13

Dysentery.—See the Director of Medical and Sanitary Services' Report on page 15.

Hepatic abscess accounted for 41 cases and 7 deaths. There were only two European cases, with no deaths.

The following tables give details of the distribution of infectious diseases during the years 1927, 1928 and 1929. The first table is shown on the old form used for the weekly bulletin of infectious disease, and will be discontinued after this year ; the second gives similar details for 1928 and 1929 on the new form now in use.

Incidence of Principal Infectious Diseases during 1927, 1928 and 1929.

(Compiled from telegraphic returns received weekly from Medical Stations. The figures are frequently obtained from native information, and are not always reliable.)

Districts.	Smallpox.						Cerebro-spinal Meningitis.						Plague.						Influenza.					
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	1927.		1928.		1929.		1927.		1928.		1929.		1927.		1928.		1929.		1927.		1928.		1929.	
Northern Area:																								
Bukoba	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mwanza	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36	35	—	—	—	—	—	—	—	—
Arusha	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
Usambara	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Moshi	—	—	—	—	—	—	—	—	—	—	5	3	—	—	—	—	—	—	—	—	—	—	—	—
Central Area:																								
Tabora	2	1	5	—	1	—	2	2	—	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—
Dodoma	1	1	3	—	—	—	—	—	—	—	—	—	13	10	4	4	—	—	—	—	—	—	—	—
Kondoa	1	—	4	—	—	—	1	—	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Morogoro	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Southern Area:																								
Iringa	—	—	—	—	1	—	—	—	—	—	—	—	—	—	3	3	—	—	—	—	—	—	—	—
Mahenge	34	—	5	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33	—
Songea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Western Area:																								
Kigoma	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ufipa	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rungwe	—	—	—	—	202	22	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Area:																								
Tanga	—	—	—	—	—	—	3	3	2	—	1	1	—	—	—	—	—	—	—	—	540	8	—	—
Pangani	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bagamoyo	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dar-es-Salaam	37	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rufiji	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kilwa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lindi	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mafia Island	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	84	8	26	—	206	22	7	6	7	3	10	6	13	10	43	42	—	—	—	—	540	8	33	—

Incidence of Principal Infectious Diseases during 1928 and 1929.

(Compiled from telegraphic returns received weekly from Medical Stations. The figures are frequently obtained from native information, and are not always reliable.)

Provinces (area in square miles).	Districts.	Area (square miles).	Population.	Smallpox.				Plague.				Influenza.				Cerebro-spinal Meningitis.			
				1928.		1929.		1928.		1929.		1928.		1929.		1928.		1929.	
				Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Central :																			
Area .. 38,770	Dodoma ..	11,830	166,775	3	–	–	–	4	4	–	–	–	–	–	–	–	–	–	–
Population 607,467	Singida ..	8,160	235,461	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Kondoa ..	5,750	160,319	4	–	–	–	–	–	–	–	–	–	–	–	3	1	–	–
	Manyoni ..	13,030	42,912	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Tanga :																			
Area .. 13,863	Tanga ..	1,457	95,871	–	–	–	–	–	1	–	–	540	8	–	–	2	–	1	1
Population 349,375	Pangani ..	982	24,835	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Handeni ..	4,930	56,015	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Usambara..	2,624	117,006	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pare ..	3,870	55,648	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Northern :																			
Area .. 33,770	Arusha ..	7,250	40,311	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Population 324,991	Moshi ..	2,120	147,447	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5	3
	Masai ..	18,470	41,822	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
	Mbulu ..	5,930	95,411	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Eastern :																			
Area .. 27,320	Dar-es-																		
Population 519,236	Salaam	4,080	164,422	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Rufiji ..	5,710	74,037	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Bagamoyo	3,910	58,192	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Morogoro ..	7,620	153,001	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Kilosa ..	6,000	69,584	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–
Mahenge :																			
Area .. 32,730	Mahenge ..	15,570	98,017	5	–	1	–	–	–	–	–	–	–	33	–	–	–	–	–
Population 197,572	Songea ..	17,160	99,555	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lindi :																			
Area .. 38,910	Lindi ..	5,233	76,706	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Population 357,255	Kilwa ..	18,636	83,535	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Mikindani..	3,495	124,988	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Masasi ..	11,546	72,026	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Iringa :																			
Area .. 41,450	Iringa ..	14,830	65,169	–	–	–	–	3	3	–	–	–	–	–	–	–	–	–	–
Population 413,882	Njombe ..	8,330	114,716	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
	Rungwe ..	1,750	148,872	–	–	186	20	–	–	–	–	–	–	–	–	2	2	–	–
	Mbeya ..	16,540	85,125	–	–	16	2	–	–	–	–	–	–	–	–	–	–	–	–
Kigoma :																			
Area .. 48,345	Kigoma ..	11,600	36,412	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Population 290,519	Kasulo ..	3,830	103,840	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Kibondo ..	5,580	62,248	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ufipa ..	27,275	88,019	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bukoba :																			
Area .. 11,010	Bukoba ..	6,010	237,863	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Population 348,036	Biharamulo	5,000	110,173	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Mwanza :																			
Area .. 25,530	Mwanza ..	5,580	240,235	–	–	–	–	36	35	–	–	–	–	–	–	–	–	–	–
Population 798,647	Maswa ..	10,870	211,865	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Musoma ..	7,250	180,136	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Kwimba ..	1,830	166,411	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Tabora :																			
Area .. 40,230	Tabora ..	23,650	182,918	5	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Population 533,746	Shinyanga	3,750	149,109	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Nzega ..	5,500	121,685	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Kahama ..	7,330	80,034	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	1
Total	—	351,928	4,740,726	26	–	206	22	43	42	–	–	540	8	33	–	7	3	10	6

Helminthic Diseases.

See the Director of Medical and Sanitary Services' Report on page 14, and Nos. 115–116 of Tables V and VI on pages 241 and 242.

Leprosy.—The attitude of the native towards leprosy and its treatment appears to be changing. The East African native now has unbounded faith in any medicine given by injection. The fact that anti-leprotic treatment by this method is universally adopted has resulted in large numbers of patients submitting themselves for examination and treatment. It is true that difficulty is experienced in inducing lepers to continue treatment over long periods, but the outlook is far more promising than it was a few years ago. Many of the older leper settlements are remote from Government medical stations, but the recent increases in the trained personnel attached to the various Missionary Societies working in the Territory have made it possible for these societies to render very valuable assistance in anti-leprotic work. Grants totalling £1,450 have been made during the year by the British Empire Leprosy Relief Association to Missions. These sums are expended in providing well-built " Treatment Centres " where cases likely to benefit can attend for injections. Supplies of anti-leprotic drugs have also been sent out by the Society. The Government, in addition to drugs, dressings, instruments, etc., provided £4,000 for the maintenance of lepers, while several Native Administrations have assisted in building leper settlements and in providing food for the inmates. A table giving particulars of the leper camps in the Territory follows :—

Leprosy Return for 1929.

Province.	Area, square miles.	Population.	District.	Area, square miles.	Population.	Centre or Settlement.	No. of Patients.	Supervision by		Notes.
								Government.	Missions.	
Central ..	38,770	607,467	Dodoma ..	11,830	166,775	Special gaol for infected criminals	4	*	—	—
			Singida ..	8,160	235,461	Mkalama treatment centre ..	84	*	—	—
			Manyoni ..	13,030	12,912	Makatapora	110	—	*	—
Tanga ..	13,863	349,375	Usambara ..	2,624	117,006	Mlalo Settlement, Lushoto treatment centre	45	—	*	—
			Tanga ..	1,457	95,871	Tanga	22	*	—	—
Northern ..	33,770	324,991	Moshi ..	2,120	147,447	Uru	23	* (M.O.)	* (Lay)	—
						Machame	23	—	*	Includes 20 out-patients.
Eastern ..	27,320	519,236	Dar-es-Salaam	4,080	164,422	Infectious Diseases Hospital treatment centre	41	*	—	—
						Nunge Settlement	63	*	—	—
			Rufiji	5,710	74,037	Mohoro	36	*	—	—
						Utete	41	*	—	—
			Bagamoyo ..	3,910	58,192	Nunge	65	*	—	—
			Morogoro ..	7,620	153,001	In district, Six Settlements ..	489	*	—	—
			Kilosa ..	6,000	69,584	Kilosa treatment centre	95	*	—	Includes 10 out-patients.
						Kimamba treatment centre ..	10	*	—	—
						Berega	45	—	*	—
						Msowero	25	—	*	—
Mahenge	32,730	197,572	Mahenge ..	15,570	98,017	Mchombe	29	—	*	—
						Mkasu	52	*	—	—
						Tabora	230	* (M.O.)	* (Lay)	—
			Songea ..	17,160	99,555	Peramiho, Settlement and treatment centre	389	* (M.O.)	* (Lay)	94 under treatment; 87 admissions during year.
						Liuli, Ngehe Settlement	79	—	*	All advanced cases.
						Liuli, Kuyu treatment centre ..	126	—	*	All early cases. Includes 50 out-patients.
Lindi ..	38,910	357,255	Kilwa ..	18,836	83,535	Kipatimu treatment centre ..	45	—	*	—
						Mafia	26	*	—	—
						Noro	25	*	—	—
						Maliwe	18	*	—	—
						Liwale	88	*	—	—
			Masasi ..	11,546	72,026	Masakata	57	—	*	—
						Ndanda treatment centre	75	—	*	—
						Lulindi, Mkaseka treatment centre	99	—	*	—
						Namagono	8	—	*	—

LEPROSY RETURN FOR 1929—*continued.*

Province.	Area, square miles.	Population.	District.	Area, square miles.	Population.	Centre or Settlement.	No. of Patients.	Supervision by		Notes.
								Government.	Missions.	
Iringa ..	41,450	413,882	Rungwe ..	1,750	148,872	Makete centre and Settlement ..	580	* (M.O.)	* (Lay)	365 totally incapacitated.
			Mbeya ..	16,540	85,125	Madibira	34	—	*	—
Kigoma ..	48,345	290,519	Kibondo ..	5,580	62,248	Kibondo	4	*	—	—
			Ufipa ..	27,275	88,019	Mwene	35	*	—	—
						Kirando	36	—	*	—
Bukoba ..	11,010	348,036	Bokoba ..	6,010	237,863	Kagondo treatment centre ..	14	* (M.O.)	* (Lay)	—
						Small stations under native authorities	76	*	—	—
Tabora ..	40,230	533,746	Tabora ..	23,650	182,918	Sekonge treatment centre	39	—	*	—
						Isikiza Settlement only	41	*	—	—
						Usoke treatment centre	24	—	*	—
			Shinyanga ..	3,750	149,109	Kolondoto treatment centre ..	100	—	*	—
			Kahama ..	7,330	80,034	Bwenda	19	*	—	—

The * indicates under which column the centre or Settlement is classified.

TABLE SHOWING INCIDENCE OF TUBERCULOSIS AT THE VARIOUS STATIONS IN THE TERRITORY DURING 1927, 1928 AND 1929.

Station.	1927.				1928.				1929.			
	Pulmonary.		All other Forms.		Pulmonary.		All other Forms.		Pulmonary.		All other Forms.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Arusha	53	—	10	—	35	2	8	1	36	8	14	—
Bagamoyo	—	—	42	—	7	—	2	—	11	—	1	—
Biharamulo	1	—	2	1	—	—	—	—	2	1	—	—
Bukoba	2	—	4	—	2	2	5	—	1	—	6	—
Dar-es-Salaam—												
European Hospital	6	1	1	1	11	2	—	—	7	—	—	—
Sewa Hadji Hospital	27	3	4	—	33	1	12	1	29	3	1	—
*Health Office	9	6	—	—	44	—	—	—	20	—	—	—
*Private Practitioners	11	1	—	—	8	—	—	—	8	—	—	—
Dodoma	5	1	2	2	12	—	2	—	8	4	15	3
Handeni	3	—	2	1	—	—	6	—	2	—	1	—
Iringa	1	—	3	1	6	5	6	2	2	—	7	2
Kahama	1	—	2	1	3	1	—	—	3	—	2	2
Kasanga	—	—	—	—	—	—	—	—	—	—	—	—
Kasulo	—	—	—	—	—	—	3	—	—	—	—	—
Kibata	—	—	6	—	1	—	2	—	—	—	—	—
Kibaya	—	—	—	—	—	—	2	—	1	—	—	—
Kibondo	3	1	1	—	1	—	—	—	7	2	2	—
Kigoma	3	—	2	1	3	—	2	—	3	—	3	—
Kilosa	9	—	3	—	5	2	1	—	7	3	3	—
Kilwa	—	—	3	—	3	—	2	—	16	—	6	—
Kisaki	—	—	1	—	—	—	1	—	—	—	—	—
Kondoa	14	3	5	—	6	1	1	1	10	2	10	—
Lindi	7	—	6	—	5	1	—	—	7	1	2	1
Lushoto	1	—	—	—	4	3	4	—	2	—	—	—
Mafia	5	1	—	—	—	—	1	—	4	—	—	—
Mahenge	1	1	1	—	3	—	2	—	3	1	1	—
Malangali	—	—	—	—	—	—	—	—	—	—	—	—
Manyoni	—	—	—	—	—	—	—	—	—	—	—	—
Mbeya	1	—	—	—	4	1	2	—	2	—	1	—
Mbulu	21	3	3	—	6	2	—	—	7	1	1	1
Mikindani	1	—	5	—	2	—	—	—	8	—	4	1
Mkalama	4	—	1	—	1	—	1	—	4	—	10	—
Morogoro	18	—	—	—	19	5	1	—	10	4	—	—
Moshi	35	5	5	—	14	5	4	1	55	4	3	—
,, Kibongoto	40	—	11	—	70	6	36	—	63	8	74	—
* ,, ,, District work	116	—	115	—	406	—	206	—	261	—	43	—
Mpwapwa	1	—	—	—	—	—	—	—	—	—	—	—
Musoma	5	—	4	—	2	—	6	—	7	—	5	1
Mwanza	33	5	8	1	16	3	7	—	13	2	8	—
Mwaya	1	—	—	—	—	—	2	—	1	—	—	—
Nzega	1	—	3	—	7	1	6	1	15	1	3	—
Pangani	25	6	—	—	13	6	3	—	13	4	8	2
Shinyanga	6	—	7	—	2	1	—	—	4	1	13	—
Singida	9	—	9	—	3	2	6	1	3	—	1	—
Songea	11	1	—	—	9	2	13	—	2	—	9	—
Sumbawanga	1	—	1	—	6	—	1	—	—	—	1	—
Tabora	8	3	1	—	19	10	2	—	15	5	4	—
Tanga	80	18	13	2	150	51	9	—	101	47	4	—
Tukuyu	6	—	7	1	3	—	1	—	11	1	—	—
Tunduru	3	1	—	—	—	—	—	—	1	—	4	—
Ujiji	1	—	2	—	3	—	4	—	2	2	—	—
Utete	—	—	—	—	2	1	—	—	2	—	1	—
Kahama Maternity and Child Welfare Centres	—	—	—	—	35	1	6	—	6	—	3	—
TOTAL	589	60	295	12	984	117	378	8	795	105	274	13
Railhead Returns	1	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous Dispensaries, Missions, etc.	—	—	3	—	—	—	—	—	15	2	—	—
GRAND TOTAL	590	60	298	12	984	117	378	8	810	107	274	13

* Not included in Tables V and VI.

(2) *General Measures of Sanitation.*

Considerable sums have been spent during past years in the improvement and extension of drainage in the townships. During the year under review £750 was provided for Bukoba, £2,000 for Dar-es-Salaam, £1,000 for Tanga, and £3,000 for the draining and resurfacing of the roads at Moshi. Many of the towns are flat and low-lying and, were plans of complete drainage systems available, better value could be obtained for the expenditure on works of this nature. At present construction has to be undertaken to deal with emergencies occurring in different areas, frequently without regard to whether the work done can be incorporated in a complete scheme for the townships concerned. Recommendations have been made in previous Annual Reports for the appointment of an expert to draw up a scheme for Dar-es-Salaam. During 1928 and 1929 data have been collected and reports made by the Public Works and Medical Departments. The sum of £3,800 has been included in the Schedule of Loan Expenditure for "Sewage Scheme Investigation." Should this item be sanctioned, it will enable the Government to provide expert advice in drawing up a scheme for the complete sewerage of Dar-es-Salaam. The present makeshift system cannot go on indefinitely and a detailed scheme is an urgent necessity.

Water Supplies.—A total of over £22,000 was sanctioned in the estimates of 1929–30 for the improvement of water supplies. During 1930–31 provisional approval has been given for an expenditure of £3,375 under Public Works Extraordinary, while, in addition, £52,875 has been included in the Schedule of Works which it is proposed should be paid for out of Loan Funds.

It is also proposed to purchase two water-boring outfits at a cost of £10,000, which will be used in an effort to provide water where at present no satisfactory natural supply is available.

The expenditure of this money will result in great improvement in the water supplies of the Territory.

(3) *School Hygiene.*

At all medical stations the Medical Officers or Sub-Assistant Surgeons inspect the school children regularly. At places where there are also Maternity and Child Welfare Clinics the Health Visitors attend the school dispensary daily, those requiring further treatment or operative interference are sent on to the general hospital.

Reference should be made to the various Health Officers' reports for details.

(4) *Labour Conditions.*

On the larger and more progressive estates, conditions under which the labourers live continue to improve, but much remains to be done on the smaller estates. A full account of the conditions throughout the Territory is published yearly in the Annual Report of the Labour Department.

(5) *Housing and Town Planning.*

Twelve meetings of the Central Town Planning and Building Committee were held during the year. This Committee, in addition to its other duties, considers large numbers of recommendations from the various Township Authorities, who now carry out the work of the old District Town Planning and Building Committees. Much routine work has been done in connection with the siting of Government and commercial buildings in the towns of the Territory.

Important recommendations were made with regard to the allocation of Government land in Dar-es-Salaam for railway extensions, bulk oil storage, and for new stores for Government Departments.

The shortage of Government-owned residential sites in Dar-es-Salaam has necessitated the selection of land between Dar-es-Salaam and Oyster Bay as a new residential area. This is situated on the coast to the north of Dar-es-Salaam, across the Msimbazi creek, which forms the northern border of the present township boundary. A new bridge is being constructed at a cost of £25,000 ; this will carry the main Bagamoyo Road and also provide access to the new residential area. The site is now being developed and 15 Government quarters are to be erected during the next financial year.

An area of ground within the Township and reasonably near to the Government offices has been selected as a site for quarters for non-European Government employees. At present they draw house allowance and make their own arrangements, but a shortage of suitable accommodation causes inconvenience and even hardship in the case of a married man with a family. It is hoped that Government quarters will be erected in the near future.

The lay-out of the new residential area at Tanga, known as Ras Kazone, was completed during the year ; plots on this site are available for the general public.

The sections of the Township Rules, 1923, dealing with buildings, were found to require amendment. New rules have been drawn up and will be published in the immediate future.

During the year the Government Architect was appointed to be an additional member of the Central Town Planning and Building Committee. He has prepared a very full report on the Town Planning of Dar-es-Salaam. This is still under consideration, but approval has been given to adopt the principles of his report for those parts of the Township area which are not yet developed. Unfortunately, legal powers do not exist to enforce landowners to comply with any definite lay-out. The Central Town Planning and Building Committee have been instructed to prepare a draft Town Planning Ordinance for consideration by the Government.

(6) *Food in relation to Health and Disease.*

The food supply of the non-native population is ample and satisfactory, both of indigenous and imported articles. Inspection is carried out by the Veterinary and Medical Departments ; in the larger towns certificated European Sanitary Inspectors are employed for this work. During 1929 the position with regard to native food supplies was not entirely satisfactory. Shortage of food existed in several districts, and conditions approximating to famine occurred in one or two isolated areas. Administrative measures were immediately taken to remedy these conditions. Owing to the lack of vitamines in the normal native dietary the Medical Department provided funds to purchase 150 lbs. of tomato seed. These were distributed throughout the Territory for native cultivation, together with explanatory leaflets in English and Kiswahili. Instruction in agricultural work is an important part of the curriculum at all Government schools, and a school garden is essential before non-Government schools can qualify for a grant-in-aid.

(7) *Traffic in Opium and other Dangerous Drugs.*

The traffic in opium and other dangerous drugs would appear to be under perfect control, for no drugs were seized during 1929.

(b) Measures taken to spread the knowledge of Hygiene and Sanitation.

No new measures have been initiated during the year. The Education and Medical Departments still continue to teach the elements of Hygiene in the schools and villages, and in some areas there are signs that their teaching has not been in vain.

(c) Training of Sanitary Personnel.

The steady increase in the routine work of the Health Offices throughout the Territory makes it difficult for the European staff to devote much time to the training of subordinate native staff. It is hoped that the establishment of a Medical School in the near future will enable the Department to train additional personnel and also to give much-needed refresher courses to those Native Sanitary Inspectors who have not recently been under constant European supervision. The more senior of the African District Sanitary Inspectorate are approaching the time when they must pass a further examination which will entitle them to enter grade IV of the African Civil Service, and it is intended that courses for these Inspectors should be held at the Health Office, Mwanza, during the early months of 1930.

(d) Recommendations for Future Work.

See the Director of Medical and Sanitary Services' Report on page 33.

EXTRACT FROM THE REPORT OF THE MEDICAL OFFICER OF HEALTH, DAR-ES-SALAAM.

By Dr. H. B. Follit, M.A., M.R.C.S., L.R.C.P., D.P.H.

General Review.

The past year has been one of continued steady progress. In a population composed of many races and communities, each with its own habits and its own standard of living, it is not easy to apply to all with equal justice and facility a set of rules evolved from the experience of the most advanced section. The general population, however, does now understand the meaning of, if not the necessity for, the more elementary rules of Public Health, and these rules are, therefore, being enforced with some rigidity, particularly in regard to the protection of food supplies, the sanitation of eating-houses and the prevention of mosquito-breeding.

The Medical Officer of Health is still in the unfortunate position of having to carry out the many duties of his own office while at the same time trying to cope with the work of Executive Officer of the Township Authority. The Health Office staff also deals with a great deal of work which normally comes within the sphere of a Town Engineer or Surveyor, and thus bears the responsibility for matters over which it has no direct control whatever. It is, however, expected that a whole-time Executive Officer will be appointed this year, and if, in addition, the P.W.D. takes over the supervision and maintenance of all works of an engineering nature, the position of the Health Office would be materially eased.

Maternity and Child Welfare.

This is the subject of a separate report by the Medical Officer in charge. There is no doubt that the work done at the Clinic and at the Government School is of very material benefit to the natives. The number of women who attend the Clinic or bring their children for advice or treatment is increasing, and what is of greater importance, many attend who but for the Clinic would receive no treatment at all or only such as is to be obtained by means of native methods. Actual confinements taking place at the Clinic show no notable increase in number, but in this respect, perhaps, above all others, the native is wedded by custom and sentiment to the ancient methods, and the Clinic in Dar-es-Salaam has not yet been established for a sufficiently long time to obtain an ascendancy in the minds of native women. For a considerable portion of the year the work of the Health Visitors has been curtailed by shortage of staff, and it is earnestly hoped, in view of the great value of the work they perform, that it will be found possible to maintain at least two Health Visitors permanently in Dar-es-Salaam.

Infectious Diseases.

Nothing of special note has occurred during the year. The number of lepers in the infectious stage and undergoing treatment remains round about 40, but the number of Tubercular cases has varied considerably, chiefly because several left the hospital without permission and could not subsequently be traced. It is hoped that in the coming year a new open-air ward for T.B. cases, and comfortable, airy hutments for the lepers will be erected. The settlement at Nunge for advanced cases of leprosy is being entirely remodelled, and a good and convenient water supply provided.

Port Health Work.

This work is performed by the same Assistant M.O.H. who has charge of the Infectious Diseases Hospital. In times of stress he can claim the assistance of one of the Sewa Hadji Hospital Sub-Assistant Surgeons.

Refuse Disposal.

The town is still dependent upon a series of primitive incinerators which are now in a very dilapidated condition. The erection of a modern Destructor has been under consideration, but it is thought that further investigation should be made before a final

decision is taken. Meanwhile a trial is to be given to a type of incinerator known as the " Shaft," which is cheap to construct and maintain, and which can be readily duplicated if proved to be efficient. From the native town refuse is removed by ox-cart, but elsewhere Albion lorries with specially-constructed bodies are used. In addition to domestic refuse, large quantities of street-sweepings and garden refuse are also dealt with.

Drains and Sewers.

The construction of a sewerage system and sewage disposal works for Dar-es-Salaam is an urgent necessity. This statement is apt to be scouted by the layman, because the Medical Authorities have been stressing the urgency for some years and still nothing very unfortunate has happened.

The bulk of the Dar-es-Salaam sewage is absorbed by the soil of the Township, and what the soil cannot absorb is pumped into tanks, whence it is emptied into the Inner Harbour.

A few lengths of old concrete storm-water drains are now used to convey sewage to the sea, and recently two or three lengths of 6-inch and 9-inch earthenware sewers have been constructed, but these were merely expensive means of dealing with the exigencies of the moment and can hardly form any part of a general sewerage scheme.

In the commercial zone, where plots are small and houses packed close together, it is often extremely difficult to find a spot where a new cesspit can be constructed, the whole of the available ground being already occupied by old pits. Moreover, the emptying of cesspits necessarily gives rise to considerable unpleasantness, especially in the more crowded parts of the Township, and some pits have to be dealt with so frequently that householders, in spite of a very reasonable fee, are called upon to pay as much as £40 per annum for the service.

At Sea View the Government has recently completed a little suburb of official houses, and here a well-thought-out sewage disposal scheme designed by the Government Sanitary Engineer has been constructed. It consists of a small Imhof tank for each house, from which the effluent, diluted by sullage water, passes to a single large Imhof tank, and thence to a filter made of graded coral rag. It is expected that this installation will work quite satisfactorily provided the necessary supervision is given.

Surface-water drains throughout the Township are chiefly open earth ditches, and since the soil consists entirely of loose sand, much time and labour are expended in their maintenance.

Food Inspection.

The methods of preparing food and the conditions under which it is exposed for sale are not of a very high standard, but much good work has been done towards improving these methods and conditions. Considerable quantities of foodstuffs have been condemned and destroyed, the greater part of which has been surrendered voluntarily. The Public Market is now a cleanly and well-conducted institution, which only needs an increased water supply and fly-proof butchers' stalls to be thoroughly satisfactory. The Municipal Eating House, at which approximately 1,000 natives take their meals each day, is now too small for the needs of the town and is to be reconstructed on another site.

A Municipal Milking-shed is being erected at the " Keko," to which all dairymen in the vicinity, lacking satisfactory sheds of their own, will be required to bring their milch cattle for milking under supervision. It is proposed later to erect three more sheds in other quarters of the Township. In conjunction with the Deputy Director of Laboratories, an experiment is being conducted with the idea of establishing the average composition of the milk actually sold in the Township ; samples of mixed milk from three herds, and of milk from selected individual cows, are being regularly analysed. Another experiment, also in conjunction with the Government Laboratory, is being carried out in order to determine whether the storage of soda-water in bottle for two or three days before use improves its quality from a bacteriological point of view. Results so far suggest that storage for two days eliminates or very markedly reduces any coliform organisms which may have been present at the time of bottling.

Considerable trouble has been experienced with Bakehouses and Indian Eating Houses ; so many of the buildings are totally unsuitable for those purposes. Efforts are being made to persuade the owners of such businesses either to bring their premises up to a decent sanitary standard or, if that is impossible, to secure other premises.

Malaria and Mosquito-control.

Figures indicate that the incidence of Malaria amongst Europeans is lessening year by year, and the amount really attributable to Dar-es-Salaam is certainly less than indicated by the figures : a considerable proportion of the cases notified consists of individuals with less than 14 days' residence in the Territory, or who have been recently exposed to infection elsewhere. Whether there is a similar reduction as regards the native population it is difficult to say, because, apart from the fact that many natives spend days at a time at frequent intervals away from Dar-es-Salaam, the majority of cases of Malaria are treated as out-patients and are not diagnosed by blood examination, so that on the one hand many of the cases reported in Dar-es-Salaam have contracted the disease outside, and on the other a proportion may be attributed to other causes. It is, however, a fair presumption that the disease amongst the natives is lessening, not only because figures suggest it, but also because Anopheline breeding-places are being steadily reduced in number, and the natives themselves are realising the necessity for taking measures for protection.

An attempt is being made to ascertain the extent to which native houses in the most malarious part of the town are infested by Anophelines and to determine what seasonal variation there may be in their numbers and species. Every house in a selected area on the banks of Mzimbazi Creek is visited by an experienced Native Inspector, who catches all mosquitoes he finds and brings them into the Health Office for identification by the Superintendent in charge of mosquito-control work. It takes two months to " catch " the whole area, so that six complete " catchings " can be made in a year. Only three " catchings " have so far been completed, consequently there is not yet sufficient evidence on which to found a statement. The investigation will be continued, and it is hoped that at the end of a year useful information will have been obtained : it will at least give an indication of the value of the mosquito-control work which is now being carried on in Mzimbazi Creek.

A considerable amount of contour and subsoil drainage work has been carried out particularly in Gerezani Creek, the eastern bank of which is now in fairly good order. In Mzimbazi Creek a main drainage channel 800 yards long has been dug ; this cuts out several sluggish bends in the creek, and many actual and potential Anopheline breeding-places have in consequence been abolished. It is hoped this year to extend this main drain, and so provide a completely new and approximately straight channel for the eastern branch of the creek. For the most part, where agricultural pipes are laid, the pipes are covered by four or more layers of " makumbis "—the split outer husks of cocoanuts—and the trenches then filled in with soil. The " makumbis " are used owing to the expense and difficulty of obtaining stone of any kind, and the experience of several years has proved them to be very satisfactory : they have been recovered from water-logged soil after six or seven years, in much the same condition as that in which they were buried. Each makumbi is laid by hand with its concavity downwards, thus providing a layer of pervious material above the pipes through which water can readily percolate. It is estimated that a saving of approximately 30 cents. per running foot of drain is effected by using makumbis in place of stone.

There are numerous areas in the Township which become swamps throughout the rainy season. These need and receive ceaseless attention, but can be satisfactorily dealt with only by a combination of drainage and filling, a procedure which cannot at present be carried out owing to lack of funds.

The chief sources during the greater part of the year of mosquitoes of the Culex and Aedes groups are, respectively, cesspits and uncovered drinking-water vessels. The

Culex mosquitoes are derived from eggs washed into the pits from house gully-traps, or where the covers of the pits are defective, from eggs deposited directly. Whenever a pit is uncovered for the purpose of pumping a cloud of mosquitoes is liberated, to find their way to the nearest houses. A fairly definite relationship can be shown to exist between the degree of infestation of a house and the condition of its own or neighbouring cesspits. Nothing less than a standard-water-container, the use of which and of no other could be legally enforced, would be sufficient to ensure that all water-storage vessels are properly screened. It is indeed a fortunate circumstance that Yellow Fever has not so far invaded the boundaries of this Township.

All anti-malarial work except for the screening of houses is carried out entirely by the Health Department, whose funds for this purpose are severely limited. The best that can be done is to lay out small schemes for certain areas and to carry them through one by one.

Water Supply.

A piped supply of good water is provided for each house in the residential area, to a considerable number in the commercial zone, and to a few stand-pipes in the native town. Besides this there is a large number of wells providing water of indifferent quality, all of which are potentially, if not actually, a danger to health: these wells are situated chiefly in the commercial area, and the continued use thereof is in part due to the fact that the supply of piped water does not equal the demand, in part to the expense of the piped water. It is hoped that, as the water-mains are extended, the majority of these wells will be abolished.

Housing.

The housing problem in Dar-es-Salaam is as acute as it is in so many other towns throughout the world. There is considerable building activity, but it is chiefly of business premises and of the better class of dwelling-houses. While landlords can obtain high rentals for miserably insanitary premises, they have no incentive to provide decent buildings; on the other hand, the Health Authorities hesitate to condemn a building as unfit for human occupation because tenants evicted can find no other accommodation. The problem needs serious consideration, especially in view of the fact that there is no particular reason why the present immunity of the town to epidemic diseases should continue indefinitely.

Offensive Trades.

The amenities of the town have been improved by the removal of all "offensive factories" to a specially laid-out site on the boundary of the Township.

Playgrounds.

In the 1927 report the then Medical Officer of Health referred to the lack of decent amusements for the natives, and it is to be regretted that the position is much the same now as it was then. There are no playgrounds or open spaces specifically provided for the enjoyment of natives; indeed, no space at present exists which is both available and suitable for that purpose. The so-called "Open Space"—an extensive area interposed between the commercial and the native quarters—has until quite recently been open only in intention, not in fact. During the past year portions of this "Open Space" have been entirely cleared of buildings, and the removal of 20 or 30 more, all of which have been condemned, would practically complete the clearance. A start should be made in laying out this space by a comprehensive scheme for the whole area. This would provide ample room for all the sports in which the natives may wish to indulge, and at the same time convert an extremely unattractive, if not insanitary, area into one which it should be pleasant to contemplate.

Staff.

The normal European Establishment of the Health Office is as follows :

Medical Officer of Health	1
Assistant Medical Officers of Health—	
Maternity and Child Welfare	1
Port Health Office and I.D. Hospital	1
Health Visitor	1
Sanitary Superintendents—	
General Sanitation	1
Mosquito Control	1
Food Inspection	1
Clerk-Storekeeper	1

Population.	Europeans.		Asiatics.		Africans.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1927—								
Civilian	774		5,900		28,464		35,138	
K.A.R. and Police	—		—		1,536		1,536	
Total	774		5,900		30,000		36,674	
1928—								
Civilian	681	370	4,300	1,800	12,791	9,139	29,081	
K.A.R. and Police	—		—		857	453	1,310	
Total	1,051		6,100		23,240		30,391	
1929—								
Civilian	837	394	3,893	2,358	13,120	9,512	30,114	
K.A.R. and Police	33	3	32	3	886	288	1,045	
Total	1,267		6,286		23,806		31,359	
Births notified—								
1927	22		37		53		112	
1928	28		75		69		172	
1929	9	6	42	49	24	26	156	
Deaths for which burial permits were issued—								
1927	13		122		324		459	
1928	13		147		373		533	
1929	20		127		395		542	
Infant deaths—								
1927	2		28		20		50	
1928	—		54		35		89	
1929	3	—	17	10	11	4	45	
Birth rate—								
1927	28·4		6·2		1·76		3·05	
1928	26·6		12·2		2·97		5·65	
1929	11·82		14·48		2·10		4·97	
Crude death rate—								
1927	16·79		20·67		10·8		12·5	
1928	12·37		11·70		16·02		17·57.	
1929	15·75		20·20		16·59		17·28	
Infant mortality—								
1927	45·5		(560)		(674)		(504)	
1928	—		720·00		507·20		518·50	
1929	200·00		290·11		300·00		282·05	

As permits are required for all burials the figures for deaths are believed to be reasonably correct. The notifications of Asiatic and African births are so unreliable as to make the figures for births and infantile mortality rates valueless.

Principal Causes of Death.

Asiatics.		*Africans.*	
Broncho-pneumonia	21	Broncho-pneumonia	6
Lobar pneumonia	13	Lobar pneumonia	34
Pulmonary tuberculosis	8	Pulmonary tuberculosis	20
Malaria	3	Malaria	2
Cerebral malaria	2	Cerebral malaria	3
Infantile diarrhœa	2	Infantile diarrhœa	3
Marasmus	2	Marasmus	4
Dysentery (bacillary)	2	Dysentery (bacillary)	2
Tetanus	1	Tetanus	2
Blackwater fever	7	Ankylostomiasis	33
Premature birth	6	Dropsy	6
Debility, old age, senility	5	Senile debility, asthenia / Senility, old age	13
Influenza	2	Cirrhosis of liver	3
Typhoid	1	Diarrhœa	3
Paratyphoid	1	Laceration of brain	3
Relapsing fever	1	Generalised tuberculosis	2
Eclampsia	1	Acute alcoholic poisoning	2
Homa (fever and allied complaints)	8	Native information only—	
Other causes	41	Homa (fever and allied complaints)	81
		Tumbo (intestinal disease)	21
		Kifua (chest complaints)	18
		Ankylostomiasis	9
		Other causes	125

Summary of Deaths.

Classified as " Certified " when seen by a Medical Practitioner before death or certified by post-mortem.

Classified as " Notified " when probable cause of death ascertained by enquiry after death.

	Certified.			Notified.			Total.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
Europeans	13	13	20	—	—	—	13	13	20
Asiatics	95	130	123	27	17	4	122	147	127
Africans	115	160	162	209	213	233	324	373	395
Total	223	303	305	236	230	237	459	533	542

	Certified.	Notified.
1929—		
Males	222	114
Females	83	123
Total	305	237

Table showing Monthly Incidence of Deaths and Rainfall.

	1927.		1928.		1929.	
	Rainfall.	Deaths.	Rainfall.	Deaths.	Rainfall.	Deaths.
January	1·538	26	1·435	48	1·380	35
February	2·680	28	0·540	44	0·250	44
March	10·489	42	3·776	32	4·538	34
April	6·331	31	12·505	36	11·176	46
May	4·409	64	6·331	46	7·180	52
June	0·007	33	5·378	49	2·950	57
July	1·106	26	0·250	30	1·170	44
August	1·200	39	1·816	44	1·200	44
September	1·626	36	0·408	50	0·110	39
October	6·435	41	0·050	41	0·265	61
November	8·460	42	4·402	48	2·563	44
December	6·620	51	0·774	65	6·090	42
Total	50·901	459	37·665	533	38·872	542

Still-births.

	1927.	1928.	1929.
Europeans	1	—	—
Asiatics	5	15	16
Africans	6	5	4
Total	12	20	20

Causes of Infant Deaths, 1929.

Disease.	European.	Asiatic.	African.	Total.
Broncho-pneumonia	—	8	—	8
Operation, hair lip	—	1	—	1
Congenital spina bifida	—	1	—	1
Premature birth	2	5	1	8
Undetermined	—	—	1	1
Diarrhœa	—	1	2	3
Marasmus	—	2	2	4
Delayed birth	—	1	—	1
Infantile diarrhœa	—	2	1	3
Cerebral malaria	1	—	1	2
Pre-natal weakness	—	1	—	1
Congenital heart disease	—	—	1	1
Premature labour	—	1	—	1
Influenza, heart failure	—	1	—	1
Infantile convulsions	—	1	—	1
Died at birth	—	—	1	1
Fever	—	2	4	6
Chest complaints	—	—	1	1

Causes of Deaths amongst Europeans, 1929.

Disease.	Remarks.
1. Carcinoma of larynx—secondary sepsis	—
2. Typhoid fever—exhaustion and heart failure	—
3. Chronic nephritis—heart failure	—
4. Drowning	—
5. Shock following rupture of small intestine	Run over by motor lorry accidentally. Suture operation performed.
6. Malaria—hyperprexia and heart failure	—
7. Septic tonsillitis—toxæmia and heart failure	—
8. Blackwater fever	—
9. Premature birth at 6½ months	—
10. Abscess of liver—heart failure	Non-resident, passenger s.s. "Watussi."
11. Chronic endocarditis	—
12. Chronic alcoholism and opium—bronchitis	Death accelerated by chronic meningitis.
13. Aortic aneurism—rupture	—
14. Malaria, cerebral	Age 3 months. Born in England.
15. Enteric fever—paratyphoid B. malaria	—
16. Shock—bullet wound through brain	—
17. Premature birth	—
18. Shock and internal and external hæmorrhage	Crushing by railway engine.
19. Malaria, chronic—heart failure	—

Malaria and Mosquito Control.

Table of Notifications of Malaria Cases Occurring in Dar-es-Salaam, 1929.

Month.	Type of Parasite.				Total Cases confirmed.	Total Cases not confirmed.	Total Cases notified.	Outside Infections.	Cases of Blackwater Fever.
	S.T.	B.T.	Quar.	Type not stated.					
January	107	—	—	1	108	423	531	—	—
February	35	—	—	—	35	359	394	4	—
March	170	1	—	—	171	312	483	1	—
April	255	—	—	—	255	485	740	7	—
May	371	—	—	—	371	218	589	3	—
June	213	—	—	—	213	220	433	2	1
July	73	1	—	—	74	289	363	1	2
August	134	—	—	—	134	264	398	2	1
September	143	—	—	—	143	310	453	3	—
October	145	—	—	4	149	445	594	—	1
November	10	4	—	—	14	108	122	2	—
December	98	1	—	—	99	297	396	3	—
Total	1,754	7	—	5	1,766	3,730	5,496	28	5
Total 1928	128	9	2	1,143	1,582	5,871	7,453	52	(15)

Analysis of Malaria Cases Notified to Health Office, Dar-es-Salaam during 1929.

Month.	Medical Officer i/c European Hospital.					Private Practitioners.					Health Office Medical Inspection Room.					Government School.					Sewa Hadji Hospital.					European Outside Infections.	B.W.F., Europeans.	B.W.F., Natives and Asiatics.	Total number of Cases notified.
	Confirmed.				Not confirmed.	Confirmed.				Not confirmed.	Confirmed.				Not confirmed.	Confirmed.				Not confirmed.	Confirmed.				Not confirmed.				
	S.T.	B.T.	Q.	Type not stated.		S.T.	B.T.	Q.	Type not stated.		S.T.	B.T.	Q.	Type not stated.		S.T.	B.T.	Q.	Type not stated.		S.T.	B.T.	Q.	Type not stated.					
January ..	9	—	—	—	4	—	—	—	—	—	1	—	—	—	—	9	—	—	1	—	88	—	—	—	419	—	—	—	531
February ..	10	—	—	—	1	—	—	—	—	23	1	—	—	—	—	4	—	—	—	6	20	—	—	—	329	4	—	—	394
March ..	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	5	—	—	—	—	164	—	—	—	312	1	—	—	483
April	11	—	—	—	—	—	—	—	—	13	1	—	—	—	—	15	—	—	—	—	228	—	—	—	472	7	—	—	740
May	17	—	—	—	1	—	—	—	—	8	—	—	—	—	—	10	—	—	—	—	344	—	—	—	209	3	—	—	589
June	21	—	—	—	1	—	—	—	—	—	—	—	—	—	—	12	—	—	—	—	180	—	—	—	219	2	1	—	433
July	14	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	58	—	—	—	289	1	—	2	363
August ..	21	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	112	—	—	—	263	2	—	1	398
September ..	10	—	—	—	5	—	—	—	—	—	—	—	—	—	—	9	—	—	—	—	124	—	—	—	305	3	—	—	453
October ..	—	—	—	4	7	—	—	—	—	—	—	—	—	—	—	16	—	—	—	—	129	—	—	—	438	—	—	1	594
November ..	2	4	—	—	1	—	—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	—	107	2	—	—	122
December ..	18	1	—	—	2	—	—	—	—	—	—	—	—	—	—	8	—	—	—	—	72	—	—	—	295	3	—	—	396
Total ..	133	7	—	4	23	—	—	—	—	44	6	—	—	—	—	96	—	—	1	6	1,519	—	—	—	3,657	28	1	4	5,496
Total 1928	282	7	1	—	80	58	2	1	—	726	28	—	—	—	—	Not recorded.					61	—	—	1,143	5,065	52	5	10	7,453

Monthly and Annual Totals of Work Performed by Drainage Gang, Dar-es-Salaam, during 1929.

Month.	Nature of Work.					
	Drain Cleaning.	New Drains Cut.	Tile Drains Laid.	Filling done in.	Grass and Bush cleared.	Drains Filled in.
	Lin. ft.	Lin. ft.	Lin. ft.	Cub. ft.	Sq. yds.	Lin. ft.
January ..	346,244	1,991	—	38,577	447,797	2,000
February ..	184,941	1,855	—	59,607	216,009	1,657
March	198,263	2,400	—	73,264	177,117	1,800
April	397,244	65	—	47,477	351,075	65
May	361,380	—	—	59,994	501,538	—
June	402,220	—	—	45,198	644,725	—
July	320,470	933	—	56,980	393,933	439
August	368,155	1,055	—	12,074	554,289	1,100
September ..	338,725	359	359	31,263	303,907	400
October	231,314	536	128	26,362	507,453	230
November ..	305,866	591	591	25,173	376,186	1,636
December ..	320,757	417	420	1,997	364,278	800
Total ..	3,775,579	10,202	1,498	477,963	4,838,307	10,127

Present Position of Drains (December, 1929).

Area.	Open Drains.	Tile Drains.	Remarks.
	Yds.	Yds.	
Gerezani Creek	11,445	1,500	
Kurasini Creeks	5,180	400	Cost of cleaning, 23 cts. per yard per annum.
Msimbazi Creek	7,162	280	Cost of laying tile drain, 1/30 to 1/50 per yard.
New Native town	6,500	—	
Upanga Area	8,890	—	Open .. .. .. $27\frac{1}{3}$ miles.
Residential Area	3,700	—	Tiled .. .. .. $1\frac{1}{4}$,,
Commercial Area	5,230	—	—
			Total .. .. $28\frac{7}{12}$,,
Total	48,107	2,180	

Comparative Table showing Collections of Mosquito Larvæ in the Township.

	1927.	1928.	1929.
Anopheles	44	284	36
Culex	326	715	399
Stegomyia	896	1,336	1,714

Adult Mosquitoes Caught in Dar-es-Salaam Township, 1929.

Anopheles.	Culex.	Stegomyia.
457	12,439	44

Return of Rainfall for the Year 1929 Recorded at Health Office, Dar-es-Salaam.

Month.	Total fall for month.	Highest fall on one day.	Date of highest fall.	Number of days on which rain fell.	Total fallen to date at end of month.
	Inches.	Inches.			Inches.
January	1·380	0·500	20th	7 + 1 showers	1·380
February	0·250	0·250	28th	1 + 2 ,,	1·630
March	4·538	1·868	17th	15 + 4 ,,	6·168
April	11·176	1·916	21st	12	17·344
May	7·180	2·500	26th	7 + 2 ,,	24·524
June	2·950	0·600	14th	8 + 2 ,,	27·474
July	1·170	0·650	24th	10	28·644
August	1·200	0·460	—	7	29·844
September	0·110	0·098	3rd	4	29·954
October	0·265	0·135	30th	3	30·219
November	2·563	1·653	3rd	7 + 3 ,,	32·782
December	6·090	1·820	25th	10 + 2 ,,	38·872
Total	38·872	—	—	91 + 16 showers	38·872

Analysis of Findings of Mosquito Larvæ in Dar-es-Salaam Township, 1929.

Month.	Rainfall in inches.	Anopheline.	Culex.	Stegomyia.
January	1·380	—	24	68
February	0·250	—	17	48
March	4·538	2	14	61
April	11·176	6	49	200
May	7·180	6	34	137
June	2·950	2	31	122
July	1·170	3	28	124
August	1·200	—	17	76
September	0·110	2	19	121
October	0·265	—	21	162
November	2·563	11	70	263
December	6·090	4	75	332
Total	38·872	36	399	1,714

Comparative Table of Artificial Breeding Places, Dar-es-Salaam Township, 1929.

	Anopheles.			Culex.			Stegomyia.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
Tins and rubbish	—	1	—	29	37	30	149	185	109
Jars	—	1	—	11	12	18	128	240	215
Flower pots, etc.	—	—	—	2	1	—	15	15	1
Drums and barrels	—	2	—	27	45	40	352	650	911
Roof—tanks and gutters	—	—	—	2	—	—	1	11	5
Unclassified iron containers	—	25	2	9	27	16	69	137	101
Defective structure	1	1	—	13	1	—	—	—	—
Excavations and borrow-pits ..	3	37	1	3	44	—	—	—	—
Dhows (water containers)	—	—	—	—	—	—	7	4	13
Tanks	1	3	2	20	16	36	150	73	343
Drains	2	4	1	20	48	32	2	3	6
Pools	17	45	6	30	67	13	3	9	3
Soakage pits and cesspits	—	4	3	82	105	113	3	1	1
Wells	—	—	3	4	9	5	2	3	4
Gully traps	—	1	—	50	120	59	9	5	1
Flushing cisterns	—	—	—	—	—	—	—	—	1

Monthly variance—Maximum 400 : Minimum 65.

The greatest number 911 of Stegomyia larvæ was found in drums and barrels.

The greatest number 113 of Culex larvæ was found in soakage pits.

The greatest number 6 of Anopheles larvæ was found in pools.

The Adult Anopheles were caught in the following areas :—

Area—	No. of Occasions.
Upanga Road	13
Ocean Road	23
Gerezani	43
K.A.R. Cantonment	29
Government School	32
Bagamoyo Street	19

General Sanitation.

Rats.

	Rats caught.	Rats examined at Laboratory.
1927	19,217	3,650
1928	11,487	2,095
1929	11,618	3,100

No rats were found to be infected during the year.

Public Latrines.

Constructed during the year	1	Government School.
Old latrines reconstructed	2	New market latrines. Belgian wharf latrines.
In course of construction	1	Dar-es-Salaam wharf.

11 water-flushed latrines have been maintained.
3 pan latrines still in use.

Sewage Disposal.

New sewers laid by P.W.D.—	
Smuts Street	Approximately 1,100 ft.
Seleman Street	Approximately 790 ft.
No. of cess tanks working	3 (2 Albion and 1 Lacre).
No. of motor cess pumps working	1
No. of loads of cess removed	7,522, or 3,008,800 galls.

Refuse Collection and Disposal.

No. of ox carts	5
No. of Albion refuse lorries	4
No. of Albion (grass) lorries	1
No. of incinerators	46
Cartloads of refuse removed, including grass and garden refuse	15,878, weight approx. 12,100 tons.

Cemeteries.

No. in use	4
New ones opened (private)	3
Old ones closed (private)	1
No. of burials carried out—	
European	20
Asiatic	13
Native	59
Notices served	1,223
No. of prosecutions	33

Summary of Report of District Native Sanitary Inspectors, Dar-es-Salaam District, for the Year 1929.

District.	No. of Inspections Reported.	No. of Huts.	Population.	Average per Hut.	Births.			Deaths.				Remarks.
					M.	F.	Total.	M.	F.	C.	Total.	
Ruvu ..	24	6,147	16,192	2·6	35	54	89	29	37	21	87	
Pugu ..	21	2,727	8,982	3·3	19	23	42	5	9	8	22	
Kimbiji ..	19	4,375	14,305	3·2	19	17	36	12	8	9	29	
Vikindu ..	18	3,260	11,326	3·2	20	27	47	18	2	5	25	
Kundutchi ..	44	1,805	5,439	3·0	18	30	48	16	12	9	37	
Massaki ..	9	1,792	9,672	5·3	46	53	99	24	26	21	71	
Maneromango	17	4,608	17,570	3·8	73	54	127	53	41	9	103	
Kisiju ..	41	7,341	9,721	1·3	99	106	205	55	48	37	140	
Mafia Island	—	254	729	2·8	1	4	5	1	1	—	2	
Kisangire ..	4	2,206	8,056	3·7	2	3	5	2	1	—	3	
Dutumi (Ruvu)	39	1,474	5,894	4·0	67	65	132	25	24	16	65	495 vaccinations carried out.

Massaki : Sanitary Inspector died 4.7.29. Not yet replaced.

Vikindu : Record incomplete. No Inspector stationed there between February and October, 1929.

Kisangire : Inspector died 3.9.18. Not replaced until November, 1929.

Pugu and Kiserawe : No Inspector posted since May, 1929.

Food Inspection.

Seizure of Unsound Foodstuffs.

Total lots seized during 1929. Lots : 322.

Articles.	Amount.	Articles.	Amount.
Fresh meat	1,111¾ lbs.	Rice	7¼ sacks
Offal	106 ,,	Vegetables, fresh	16½ lbs.
Bacon	283½ ,,	Chinese ginger	23 jars
Beans	54 ,,	Tinned biscuits	60 lbs.
Bread	810 ,,	,, cheese	2 tins
Butter	344 ,,	,, foods (baby)	105 ,,
Cheese	93 ,,	,, fish	55 ,,
Chocolate	159 ,,	,, fruits	187 ,,
Crushed mealie	2,418 ,,	,, Glaxo	6 ,,
Dried fruit	395 ,,	,, green peas	12 ,,
Fish, fresh	22 ,,	,, hams, large	10 ,,
Flour	10,454 ,,	,, jam	93 lbs.
Fruit, fresh	542 ,,	,, mincemeat	7 ,,
Golden syrup	11 ,,	,, meats	36 ,,
Ground nuts	9 sacks	,, meat pastes	33 tins
Hams, fresh	200 lbs.	,, sausages	52 ,,
Kippers	7 boxes	,, tongue	1 ,,
Milk, condensed	3,107 tins	,, vegetables	41 ,,
Onions	5 sacks	,, rice, ground	1 lb.

Samples of Food, etc., submitted to Government Analyst.

Total during year : 227.

Article.	Submitted.	Satisfactory.	Unsatisfactory.	Spoilt.
Soda water	38	29	9	—
Milk for grading	112	111	—	1
Milk samples	45	39	6	—
Milk, condensed	4	3	1	—
Ice cream	4	2	2	—
Butter	5	3	2	—
Margarine	3	3	—	—
Cheese	1	1	—	—
Ghee	4	4	—	—
Beans	1	1	—	—
Mealie meal	5	5	—	—
Syrup	1	—	—	1
Italian wine	1	1	—	—
Water	3	1	2	—
TOTAL	227	203	22	2

Notices Served.

One hundred and eighty-eight notices have been served for various reasons, and in every case the notice has been complied with in the required period.

Prosecutions.

During the year 30 complaints have been laid before the Magistrate, 18 individuals being convicted, fined or sent to prison, and 12 acquitted.

Complaint.	Charged.	Convicted.	Acquitted.
Selling milk without a permit	13	6	7
Keeping cows without a permit	12	7	5
Exposing for sale food unfit for consumption	2	2	—
Keeping eating-houses without permits	2	2	—
Assault and obstruction	1	1	—
TOTAL	30	18	12

GENERAL SUMMARY OF LICENCES AND PERMITS ISSUED IN RESPECT OF PREPARATION AND SALE OF FOODSTUFFS.

Shop and Trade.	Applied for.	Granted.	Refused.
Licensed—			
Aerated water manufacturers	4	4	—
Bakers	8	8*	—
Butchers	6	6	—
Clubs	5	5	—
Cold drink shops	37	26	11
Cow keepers	16	16	—
Eating-houses	34	27†	7
Fruits and vegetables	6	6	—
Hotels	10	9	1
Icre cream (makers)	15	4	11
Ice cream (sellers)	16	14	2
Sweetmeats	8	6	2
Permits—			
Cattle other than cows, milch	2	2	—
Grinding mills	7	7	—

* One temporary licence.

† Four closed.

REPORT OF THE MEDICAL OFFICER IN CHARGE OF INFECTIOUS DISEASES HOSPITAL, DAR-ES-SALAAM.

By Dr. I. C. Middleton, M.B., Ch.B. (Edin.), D.T.M. (Liv.).

Infectious Diseases.

Diseases notified during 1929.

Notified by—	Chickenpox.	Tuberculosis.	Relapsing Fever.	Leprosy.	Typhoid.	Measles.	Mumps.	Cerebro-spinal Meningitis.
M.O., European Hospital	1	5	—	—	3	—	—	—
M.O., Sewa Hadji Hospital	79	35	5	6	2	1	1	1
M.O.H.	58	20	4	54	—	3	1	—
Private practitioners	3	8	2	—	—	—	—	—
Total	141	68	11	60	5	4	2	1

Chickenpox.

There is a big increase over last year in the number of chickenpox cases notified. Sporadic cases amongst the native population, but the main incidence is due to an epidemic outbreak in H.M. Prison, Dar-es-Salaam. The first case from the prison was notified on September 28th, 1929, and after ten days' interval several were notified. Since then it has been interesting to observe that the cases at the prison occurred at weekly or ten-day intervals. The prison notifications account for 35 per cent. of the total. At the beginning of the prison outbreak all the prisoners' effects and bedding were sterilized, but the sleeping conditions at the prison are such as to militate against the control of any infectious condition, the prisoners lying together in two long dormitories, long-term prisoners in one, short-term prisoners in the other. They lie on a blanket on the floor, and the prison officials find it impossible to keep them from huddling together.

The cases from the prison are decreasing now, whilst November was the "Peak Month."

There were small epidemics at the Government School and in the K.A.R. lines; that at the K.A.R. lines was soon controlled by frequent inspections.

Tuberculosis.

Many of these notifications are due to the efforts of the African Sanitary Inspectors and the Orderlies at the I.D.H., who bring suspected cases to hospital or get a M.O. to see them.

However, a large percentage remain unnotified, as the markedly emaciated appearance of many of the dead examined lead one to suspect tuberculosis as the true cause of death.

Typhoid.

Of the typhoid cases, the three European cases were sent to the European Hospital from Morogoro, Dodoma and the Rufiji.

The two cases notified from the Sewa Hadji Hospital also came from outside Dar-es-Salaam. One case was a lascar sailor brought ashore from the s.s. "Macindo" by the Port Health Officer, Dr. Willmott. The other case occurred in an African who resided outside the Township on the Pugu Road.

Cerebro-spinal Meningitis.

The one case of this disease was due to the Bacillus-pneumococcus.

SUMMARY OF HOSPITAL FIGURES FOR THE YEAR 1929.

Disease.	Remained 1.1.29.	Admitted.	Discharged.	Died.	Absconded.	Remained 31.12.29.
Chickenpox	—	138	120	1	3	14
Tuberculosis	8	49	17	22	13	5
Leprosy	30	63	37	3	10	43
Typhoid	—	1	—	—	—	1
Measles	—	4	4	—	—	—
Mumps	—	1	1	—	—	—
Other conditions	—	9	8	1	—	—
TOTAL..	38	265	187	27	26	63

Of the other conditions, five were admitted for observation, being suspected chicken-pox cases. They were all discharged after a few days.

One was a case of malaria in the hospital ayah.

One was a skin tinea sent in as a suspected leprosy, another was a bronchitis which cleared up after ten days in hospital, while another was a prisoner, who was transferred from the Sewa Hadji Hospital prison ward to the I.D.H., as the Medical Officer considered he was a danger to the other prisoners in that ward. He had had broncho-pneumonia, and after his temperature came down he continued to be very ill, spitting up much foul blood-stained material. Tuberculosis was a possibility, although his sputum was always negative. At the post-mortem an unresolved pneumonia with gangrene on one lung was found.

RETURN OF TUBERCULOSIS PATIENTS, 1929.

	Europeans.	Asiatic.	Africans.	Total.
Notified 1929	7	15	46	68
Remaining in the Infectious Diseases Hospital, 1.1.29	—	1	7	8
Admitted to the Infectious Diseases Hospital	—	4	45	49
Discharged from the Infectious Diseases Hospital	—	4	13	17
Died in Infectious Diseases Hospital	—	—	22	22
Absconded from the Infectious Diseases Hospital	—	—	13	13
Remained in the Infectious Diseases Hospital, 31.12.29	—	1	4	5
Repatriated	—	3	—	—

Of the seven European cases notified, two were admitted to the European Hospital. One belonged to the Land Department and one to the P.W.D. Two were Greeks, one in transit to Europe from Morogoro, and the other living on a shamba on the Kilwa Road.

One was a Belgian in transit from the Congo Belge. He was stated to be convalescent from Pott's disease and was the only non-pulmonary European case notified.

The remaining two were priests. One an Irish priest from Bagamoyo who stayed with the White Fathers whilst in Dar-es-Salaam. The other was a Norwegian missionary from Shinyanga, who was proceeding to Durban on the "Llanstephan Castle," but was sent to the hospital by the ship's surgeon and captain.

In all these pulmonary cases the tubercle bacillus was found in the sputum.

Of the Asiatic cases admitted during the year to the I.D.H., three were repatriated to India, being sent home by friends, whilst in one the disease was sufficiently arrested for him to resume his duties.

The striking feature of the African cases is the rapidity with which most of them go downhill. Several cases were admitted who died within a fortnight of admission. These cases were usually suffering from acute tuberculosis, pneumonia or broncho-pneumonia.

The remainder go on slowly progressing until there is an acute development of a pneumonic nature, which carries them off in a few days. In very few cases is there a definite arrest of the disease.

Relapsing Fever.

Eleven cases in all were notified during the year.

Four of these cases occurred at the Government School. They all lived in the town, whilst one developed this condition within a few days of arriving from Tabora, and another developed it after returning from a holiday at Kilosa.

Of the five cases notified from the Sewa Hadji Hospital, one belonged to Dar-es-Salaam, one was a female from the K.A.R. lines, one had just returned from safari, one came from Tabora, and one occurred in a female who had travelled via Tukuyu from Nyasaland. Of the two cases notified by private practitioners, one occurred in an Asiatic living in the town, and one occurred in a priest who had been staying in the Mahenge district.

All the cases were microscopically positive.

Leprosy. Return of Leper Patients, 1929.

	Nunge.	I.D.H.
Remained 1.1.29	65	30
Admitted	8	63
Discharged	3	37
Died	10	3
Absconded	1	10
Remaining 31.12.29	59	43

These patients receive weekly injections of hydnocreol at the I.D.H. The injections are given subcutaneously and in increasing doses from 2 c.c. to 10 c.c. After several injections there is a distinct improvement, the skin patches being less raised and fading in colour. They never disappear entirely, however.

The more chronic cases are given moogrol intramuscularly once a week. There has been no serious reaction with either of these drugs.

Once a month nasal smears are taken for bacteriological examination, and if a patient is found negative on three successive occasions, he is discharged, being told to attend the hospital for a weekly injection. At present there are about 12 old patients who come to the hospital each week and receive an injection.

A small percentage of the new cases are negative from the outset and are probably skin tineas. They are kept in the hospital until they have the three successive negative reports, and have the benefit of injections during this period. One or two of these cases have improved very much with chrysarobin and salicylic ointments applied at alternate periods, thus favouring the view that they are tineas.

Old-standing chronic cases are transferred to Nunge Leprosy Settlement.

The new buildings at Nunge were completed early in December and the old daub and wattle buildings razed to the ground and burned. The new buildings are a marked improvement, and the patients who are not crippled do take a pride in them and keep them clean.

The water at Nunge has still to be carried a good distance from a water-hole, but a bore shaft has been sunk near the hospital and water tapped. The P.W.D. are now going to fit up a pump to test the supply. If the supply is sufficient a permanent pump will thereafter be erected.

Pathological Specimens.

Four hundred and twenty-six pathological specimens were sent to the Laboratory from the following sources :—

(*a*) Health Office.
(*b*) Government School.
(*c*) Child Welfare Centre.
(*d*) Infectious Diseases Hospital.

The following are the figures in detail :—

238 nasal smears for examination for bacillus lepræ.
78 blood films for examination for malarial parasites.
75 sputa for examination for bacillus tuberculosis.
19 skin scrapings for examination for bacillus lepræ.
7 fæces.
7 urines.
2 specimens of pus.

426 total.

VACCINATION RETURN FOR 1929.

Total No.—	1927.	1928.	1929.
Vaccinated	415	3,511	1,183
Re-inspected	4	2,039	148
Successful	3	1,182	67
Unsuccessful	1	857	81
Not re-inspected	411	1,472	1,035

These were carried out at the following places :—

(*a*) Health Office.
(*b*) Maternity Clinic.
(*c*) Government School.
(*d*) On board ships.

Only in those cases dealt with at the Maternity Clinic and Government School could a check be made of the results, as the remainder were carried out on passengers and dhow crews.

In 1928 there was a general vaccination of the native population by the African Sanitary Inspectors. This accounts for the high figures of that year.

PORT HEALTH WORK.

	1927.	1928.	1929.
Ships cleared	480	558	602
Dhows *cleared*	1,738*	2,290*	884

* Visited.

It will be seen from the above figures that the work of the Port is gradually increasing.

The figures for dhows of the previous two years refer to the dhows *visited* by the Mosquito Brigade and not to the dhows *cleared* by the Port Health Officer.

During the year the following cases of infectious disease were detected on board ships and removed :—

Measles : One Asiatic from the s.s. " Khalifa," admitted I.D.H.

Chickenpox : Two Africans and one Asiatic from the s.s. " Cupid," admitte I.D.H.

Typhoid : One Asiatic from the s.s. " Macindo," admitted S.H.H.

MATERNITY AND CHILD WELFARE WORK IN DAR-ES-SALAAM.

BY DR. N. CHILTON, B.A., B.M., Ch.B. (Oxford), MEDICAL OFFICER IN CHARGE.

STAFF.

The Medical Officer, Miss M. Harvey Clarke, went home on leave on November 12th, and charge of the Maternity and Child Welfare and School Clinics was then taken over by Dr. N. Chilton.

Miss McIlroy was the Sister and Health Visitor in charge until June 22nd, after which Miss Craig took over the main duties. Several new Health Visitors have worked at the Clinic for short periods before leaving to commence their duties up-country.

The staff consists of :—

1 Medical Officer.
1 Sister and Health Visitor in charge.
2 Senior Native Ayahs.
4 Native Ayahs (Probationers).
1 Orderly.
2 Drivers for Armstrong-Siddeley box body cars on loan from the Transport Department.

Buildings.

Plans for the construction of a new out-patient room, a septic ward and a store-room have been passed, and the work is to be put in hand immediately.

Water Supply.

Water is still obtained from the well in the compound and is pumped up by the orderly. As a considerable quantity of water is now required, and the new buildings will increase our needs, it is hoped that before long we may be connected to the town water mains.

Welfare Work.

On September 24th the first series of Weekly Welfare Afternoons was held. Mothers are invited to bring their children, upon whom advice is given. Those who wish are also instructed in sewing and the making of small garments. The provision of afternoon tea not only encourages mothers to visit the Clinic, but ensures their arriving at a reasonable hour. In November we began vaccinating the children at these sessions. This has proved a great draw, and some mothers have been quite indignant when the vaccination of their infants has had to be postponed on account of impetigo or other complaints.

The number of attendances is growing each month. Except in urgent cases, there is no time for treatment at these afternoons, which may begin at 1 p.m. and go on until after 4.30 p.m. Examination and advice are aimed at rather than medical treatment. Mothers whose children are in bad health are recommended to bring them on the following morning, when they receive full medical attention.

On June 14th a Baby Show was held at the Clinic. There was an audience of about 800 people, and the competitors numbered 220. H.E. The Governor and Lady Cameron were present, Lady Cameron kindly presenting the prizes to the successful competitors. The children were divided into four classes according to age, and a fifth class was ultimately formed on account of the large number of older children present. The School Band played at intervals, and light refreshments were provided through the generosity of Dr. R. R. Scott, Miss M. Harvey Clarke and Miss Craig. H.E. The Governor, in a speech which was interpreted into Ki-swahili by Dr. Scott, announced that at the next show he would give a special prize for the best baby which had been born at the Clinic during the year.

Below is a financial statement of the expenditure connected with the show :—

	Shs.
Cash prizes	145/–
Umbrellas	36/–
Consolation prizes :—	
Beads	57/30
Muslin (for bags)...	4/50
Sweets	15/–
School Band	20/–
Balance in hand	–/20
Total	278/–

Maternity Work.

It is unfortunately still the case that very few native women can be persuaded to leave their homes and enter the Clinic for confinement. An average of less than three admissions for confinements per month is all that we can show. When cases of difficult labour occur outside, the Health Visitor has often to travel many miles and either bring the patients in herself or attend them in their homes. The number of ante-natal examinations still depends to a considerable extent upon the number of women seen in the K.A.R. and Police lines. It is hoped, however, that the weekly welfare afternoons may interest a large section of the population in the benefits which the Clinic has to offer them. Among the cases admitted during the year was a woman with a twin pregnancy in whom malaria caused abortion. There was a rise of temperature afterwards which caused some anxiety. Treatment, consisting of intrauterine douches followed by glycerine packs, resulted in a satisfactory recovery. In December a case of hydramnios with twins was delivered. The first child presented as a vertex ; the second, which caused some difficulty owing to the placenta of the first child, as a breech, In the same month a premature child weighing 3 lbs. was born, and at the time of writing it is doing well.

General Out-patient Work.

This constitutes the largest section of work at the Clinic. The total attendances remain in the neighbourhood of 2,000 each month. Many women attend with disorders other than those of a gynæcological or obstetric nature. It is impossible to prevent their doing so without depriving them of medical treatment altogether, since these patients mostly refuse to enter the gates of the Sewa Hadji Hospital. Patients whom it is deemed necessary to send to hospital, *e.g.*, those who require rest in bed, are generally escorted there personally, because they seldom arrive if they are told to proceed there alone. When the new hospital is built it will be easier to send patients on to other departments. During the last two months we have begun giving injections for syphilis and yaws, instead of sending these cases to hospital, as was formerly done. This has prevented the loss of some interesting clinical material and has also, we venture to think, led to a more regular attendance. Cases who fail to attend for their regular injections are rounded up by the Health Visitor, since a note is kept of all their addresses. Generally, however, persuasion is unnecessary, and as one patient untruthfully remarked, " At the hospital we received only injections of water, but here is good medicine." For the sake of convenience, boys of the school who require injections are also made to attend at the Clinic at a fixed day and hour.

The children's ailments cover a wide range. Many sick children are carried in from distant shambas with pathetic regularity. As often as not they are suffering from malnutrition and neglect. An interesting case which is at present under observation is what is thought to be a case of Von Jaksch anæmia in a child of about six months. On examination the child was seen to be markedly pale. The spleen almost filled the abdomen and was not hard in consistency. Hæmoglobin totalled 80 per cent. and the following blood picture was obtained :—Leucocytes, total 15,600 per c.mm. ; differential count : Polymorphonuclear, 32 per cent. ; lymphocytes, 61 per cent. ; large mononuclear, 2 per cent. ; eosinophile, 3 per cent. ; neutrophile myelocytes, 2 per cent. ; megaloblasts, 3 per 100 leucocytes ; normoblasts, 9 per 100 leucocytes, anisocytosis, poikilocytosis, polychromasia, red cell anæmia, granular degeneration are present. Small lymphocytes predominate. This child is to be treated with liver extract and the outcome will be watched with interest.

The children who live in the town suffer very commonly from scabies, impetigo and seborrhœa. Cases of blepharitis and conjunctivitis attend almost daily, as might be expected in a town full of dust and wind. Many children suffer from chest ailments which seem at the commencement to be extremely severe. Fortunately, the majority of these children recover in an almost miraculous fashion after a couple of nights in the Clinic.

Cases of malaria are very common. The diagnosis is invariably confirmed by the taking of blood films.

Visiting.

Since the month of June it has not been possible to visit so many houses as were visited previously. The reason is that only one Health Visitor is now available for this important work. Most of her time is occupied at the Clinic, and it is not often that she can spare more than one afternoon a week visiting. One native ayah now visits and does good work. Weekly inspections of the Police and K.A.R. families are still held. In the Police lines attendance at these inspections is not compulsory, but a fair average attendance is obtained. At the K.A.R. the reduction in strength has led to a smaller number of women patients. It is very difficult to persuade these women to come to the Clinic for their confinements—possibly because the Health Visitor is not allowed to enter the K.A.R. lines, where she would have an opportunity of talking to the women. Routine treatment for hookworm was administered to these women in December.

The Health Visitor has separate quarters at 59, Speke Street, where an Armstrong-Siddeley box car is garaged. The house is really intended for two Health Visitors, and it is hoped that we may be allowed a second before long. The work of the Clinic occupies almost the whole of the present Health Visitor's time. She can hardly ever visit the I.D. Hospital when the Medical Officer is there, and is, therefore, unable to discuss the treatment of patients with him. Supervision of the School Clinic is impossible. Night work, when it occurs, renders her task the next day a burdensome one in this tropical climate.

Summary of Work done, 1927–1929.

	1927.	1928.	1929.
Out-patients—			
New cases—			
Mothers	1,831	2,939	4,328
Children	4,082	3,419	4,040
Total	5,913	6,358	8,368
Attendances—			
Mothers	7,876	9,423	12,327
Children	—	—	11,771
Total	7,876	9,423	24,098
Ante-natal examinations	134	271	283
Admissions to Clinic—			
Women	68	70	100
Children	32	58	79
Total	100	128	179
Mothers admitted for confinements	27	23	30
,, ,, in post-natal state	10	19	21
,, ,, in ante-natal state	9	7	11
,, ,, for gynæcological conditions	3	3	19
,, ,, for other conditions	19	18	19
Home Visiting in Native Town, etc.—			
Visits to K.A.R. lines	—	94	86
,, Police lines	—	99	106
,, railway lines	—	22	20
,, school	—	282	272
,, confinements in own homes	4	3	—
,, premature births in own homes	2	2	—
,, still-births in own homes	1	1	4
,, new births in own homes	29	30	24
Total Visits	2,719	2,690	2,422

Weekly Welfare Afternoons (begun in September)—

New cases—		Attendances	
September	71		71
October	45	,,	146
November	28	,,	158
December	20	,,	175

Government School, 1929.

Apart from the excitement of the Tanganyika Exhibition, in which the school and its buildings played an indispensable part, there is little to be reported beyond what was described in last year's annual report. A few improvements in the well-being of the boarders may be mentioned. An incinerator has been provided and is working satisfactorily. The kitchen for which we had hoped has now been built. New and well-kept latrines on the water-flush system have also been provided. During December a successful attempt was made to get rid of the rats, which had been very numerous in the store-room and had caused considerable damage to property.

An experiment in diet, which it is hoped to continue for several months, was begun in October. Of the forty boarders, it was unfortunately only possible to use twenty, owing to the wide differences in age and stature of the boys. The number chosen consisted of boys who could be most strictly compared with one another, the biggest and smallest being excluded. They were weighed, their height measured, and were subsequently divided into two groups. One-half received, in addition to their ordinary diet, one pint of milk per diem. The other half, as controls, received the same diet without the extra milk. Since the commencement the boys have been weighed once every week, but it is too soon yet to report on the results obtained. After two months, of all the big boys weighed irrespective of diet, five have lost weight and four have failed to change in weight at all. Those who have lost in weight show no clinical cause for the loss, and it is quite possible that the loss of not more than 3 lbs. in any case is due to the hot weather.

Cases of *malaria* among boarders and day-boys alike are still very numerous and show a further increase on those of last year. Every child who has a raised temperature is now examined for parasites, whatever the diagnosis is presumed to be. Thus the figures for malaria are accurate, while the P.U.O. group is much smaller than it has been in previous years.

Cases of *scabies* are treated at the Clinic in order to prevent their spread. During November, treatment by Marcusson's ointment was tried. This preparation is found to give very satisfactory results and has led to more rapid cures than were formerly obtained from the old sulphur ointment. The unpleasant smell of the ointment has been eliminated with a small quantity of eucalyptus, of which the natives are very fond.

The epidemic of *chickenpox* which began in the town in June, and is still smouldering, has had its effects on the school day-boys. Several cases have occurred and have been treated in the Infectious Diseases Hospital.

A few cases of *relapsing fever* are noted. With the exception of one patient, who had only arrived at the school the previous day, the disease was confined to day-boys.

Infections with *S. Hæmatobium* continue to be fairly common. These cases are generally admitted to the Sewa Hadji Hospital, where they receive injections. It is, however, difficult for the hospital authorities to detain them long enough to effect a cure. The boys run away from hospital early, and remain at home instead of returning to school.

The problem of sending patients to hospital is constantly cropping up. Frequent enquiries have to be made to ensure that the boys are really attending regularly. *Yaws* patients no longer attend the hospital. They are taken from the school to the Clinic, where they receive their injections, and in the intervening days they attend the School Clinic for dressings. Cases of *gonorrhœa* are frequently seen at the school. They, too, must be sent to the hospital for treatment, but do not attend long enough for cures to be effected. In these difficult cases the Headmaster has been extremely helpful in co-operating with the Medical Officer, and has done his utmost to ensure regular attendances.

Government School.

Notes.	1927.	1928.	1929.
Average number of scholars on roll	428	400	388
,, daily attendance	392	364	349
,, number of boarders on roll	32	48	33
,, ,, ,, ,, resident	29	44	33
New cases	3,110	3,297	2,975
Total attendances	27,458	12,067	11,114

GOVERNMENT SCHOOL—*continued.*

Notes.	1927.	1928.	1929.
Cases referred to Native Hospital	99	68	64
Cases sent to I.D. Hospital	—	2	8
Cases treated—			
Pneumonia bronchitis	165	28	15
Pulmonary tuberculosis	1	1	1
Mild chest conditions	458	344	540
Influenza	119	—	—
Measles	10	—	—
Chickenpox	—	1	7
Tick fever	1	1	7
P.U.O. (homa)	427	348	147
Malaria	42	74	106
Yaws	42	31	36
Scabies	193	221	141
Other skin conditions	583	347	524
Ankylostomiasis	107	113	23
Bilharzia	19	4	6
Indigestion, etc.	307	229	252
Disease of eye	121	185	221
,, ear, nose and throat	82	116	85
Headache, toothache	69	32	74
Vaccinations	—	155	42
Injuries	342	474	499
Unclassified	127	489	458

SUMMARY OF A REPORT ON THE SANITATION OF THE TOWN AND PORT OF KIGOMA.

BY DR. C. R. STEEL, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M. & H. (Lond.), MEDICAL OFFICER, KIGOMA.

JANUARY–JUNE.

The methods and routine of last year were continued, and for the sake of comparison and judgment of results, charts of incidence and rainfall continued.

The routine so strongly recommended by the International Malaria Commission of killing of adult mosquitoes in the houses of malaria cases was adopted early in the year. On the occurrence of a case the Sanitary Inspector was informed, and, accompanied by a subordinate staff, he visited the house and thoroughly saturated the air of each room with "Flit." To obtain good results, doors and windows were shut, and the drawers and doors of cupboards, etc., opened. Heavy furniture was moved away from walls. After a good concentration of vapour was obtained the room was thoroughly swept out, which ensured the killing of moquitoes lying stupefied on the floor. The number of dead insects collected after such treatment showed the effort to be worth while, and it was noticed that what might be called "carry on" cases in the same or adjacent houses ceased to occur.

LAKE BARGES.

The number of mosquitoes noticed in particular houses and the continuation of cases of malaria seemed to point to missed breeding-places of some intensity. Personal inspection showed that, though Inspectors had been reporting the fact of breeding on ships, they had either missed or failed to report that the barges towed into port were containing water in various amounts and, without exception, all breeding heavily. They are of an average of about 400 tonnage and bulkheads divide them into a main hold and fore-and-aft compartments. The floor boards of all three compartments in most of the barges are in extremely bad repair, and have a short life, as the bulk of the cargo carried into port by these barges consists of heavy ingots of copper. The water seen in the barge bottoms varied between small quantities resting in between the ribs, and dozens of gallons awash round the cargo, due to leaks or faulty battening down of the hatches. Ships, lifeboats and dinghies were found to be badly infected also. These collections were found to be alive with pupæ and larvæ, and as crews live on the barges they attend, it is likely that the anophelines bred out become very quickly infected.

The influx was dealt with by inspection when ships were visited to grant pratique. The latter was not given when breeding was found until the water had been pumped out, or, if cargo prevented this, adequate oiling of the collection. In the latter case reloading of the barge was not permitted until the barge had been pumped dry. Such action was well received by the staff of the shipping company concerned, and resulted in a great deal more attention being given to barges before arrival, so that thereafter it became infrequent to find breeding taking place in them. This was certainly partly due to the cessation of the rains, and the barges need constant supervision during the year.

Railway Sanitation.

The above action again reduced the mosquito nuisance very effectively, but still a greater number of anophelines were being seen than could be accounted for by known and controlled breeding-places. Check inspections showed that the work of the Railway Sanitary Staff in this direction was at a standstill and that all the drains in the area were choked and breeding. Railway scrap was again holding water sufficiently long to breed out mosquitoes, and various tins, drums, tanks and dinghies in the dock were holding water. Goods brought up by rail, such as motor-boats in transit, arrived with larvæ and pupæ in them, and no inspection or cleaning out of them had been attempted. A travelling tank used for labour on the line was breeding. The culverts in the railway yard, where they give place to sandy drains, had been allowed to become blocked at the end, so that lake water washing into them was retained, and no attempt had been made to limit the seepage water to a central channel. Consequently, the water had spread well out and formed numerous puddles of standing water.

It was arranged that, once a week, one of the African Inspectors from each department should together inspect the area. A labourer of this office was put to work on the culverts to keep puddles from remaining and breeding by sweeping them out each day. Central channels were again cut in the sand drains and a clear run out for the water made. The Acting General Manager was seen on a visit to Kigoma and he promised to obtain better supervision, and stated that he had received £400 for the removal of all scrap from Kigoma.

New Breeding-places.

Government completed the slipway during the period. In fixing the machinery, stone and concrete beds were constructed, in which were narrow and deep beds for the anchoring bolts. Until the whole set of machinery was finally adjusted and aligned, when these holes were filled in with cement, they gave rise to anopheline breeding. The hauling gear being open, it is seen after rain that the large cog-wheels retain water in the rims, and a watch showed that this only evaporates slowly, so that they will need constant inspection in the season.

The rise in lake level with the increased rainfall caused a localised swampy area to appear in one corner of the slipway, and a watch on it showed the eventual appearance of larvæ. This was dealt with by the cementing in the space between the rails of the slipway and the remaining areas were covered with sand. The corner is a favourite one for the grounding of small motor-boats and dinghies and needs to be watched at the height of the rainy season.

The old boiler of the s.s. " Mwanza," which had been partly tipped into the lake near the pumping station, was eventually demonstrated to be a breeding-place. A certain amount of sand was thrown into it to try and cover the contained water, and the subject again brought to the notice of the railways. This boiler has since been pulled out and buried.

Quarries.

The Township Authority recommended that all quarrying of stone and sand within the basin in which lies the bazaar should be stopped, as a precaution against further soil erosion, and also because of the number of holes which have been made in the past by such quarrying. A point was fixed on the south-west aspect of Kitunda Hill as a point

for all quarrying by permit, and that such quarrying be carried out without the making of pits likely to retain water.

Mosquito Species.

The only ones caught and sent into Dr. Buxton, of the London School of Tropical Medicine, proved to be :—

Aedes Argenteus.
Culex Fatigans.
Anopheles Gambiæ (*Costalis*).

He observes, " The only species of anopheles is the one which is so troublesome all over tropical and sub-tropical Africa. It is highly probable that any local malaria you may have is due to this insect, which tends to breed in fully-illuminated water, including quite temporary shallow puddles made after heavy rain."

July–December, 1929.

There is little to add for this period. Oil cans were placed in the railway culverts to help keep down breeding in them. The only fresh breeding-places dealt with were holes in mango trees, of which a number were found breeding. These holes were filled with sand.

The rains started early and were very heavy and continuous. Consequently the lake barges have been a great nuisance and the majority of re-entries to the port bring in larvæ and pupæ. As mentioned before, they produce a large proportion of anophelines, and consequently cause a dangerous concentration in the town.

The grass grew early and quickly, and the amount of rain caused much filling of drains, needing much continuous employment of cleaning gangs.

The chief local malaria carrier is probably *Anopheles Gambiæ*, but Kigoma is threatened by other than locally-bred anophelines, *i.e.*, those imported from the Congo and the Belgian portion of the Territory by boats and barges.

Dengue Fever.

No cases of " Saddle Back " temperature with slow pulse and a skin rash were seen this year.

Tick Fever.

Cases continue to occur with regularity amongst the population of Indians and natives outside Kigoma Township. Europeans on safari have had better fortune than last year, either through more care or through the efforts made to clean up the rest-houses as a result of last year's cases. One European official arrived by the s.s. " Liemba " with infection as a result of being bushed in Ufipa in heavy rain without tent or equipment, and sleeping in a hut.

The new gaol at Kigoma was well advanced by the end of the year. It is interesting that ticks from the Police lines, Ujiji, and from Uvinza, placed in the hospital office in a glass-topped box, and not fed at all, early in 1928, are still alive at the time of writing.

(*a*) Epidemic Diseases.

(1) *Smallpox.*

Vaccinations.	Successful.	Negative.	Not seen again.
13,010	4,336	1,693	6,981

No cases of this disease were seen. Several severe chickenpox cases with heavy facial distribution caused suspicions, but it was noticeable in every case that the hands and feet were free, and there was often a vaccinial history. However, it was thought safer to vaccinate monkeys with contents of some of the pustules, and negative results were obtained.

The Deputy Director of Laboratory Service was not satisfied with the percentage of positive results obtained by vaccinators in Ufipa, so he made arrangements for the

better transport of the lymph in the first place. Once a fortnight the mail train arriving at Kigoma on Monday mornings brings a supply of vaccine in the ice in the dining-car from Gulwe. This is contained in a specially-made box, a duplicate key of which is kept at the hospital. The Sanitary Inspector meets the train, causes the empty box to be sent back to Gulwe by warrant, and carries the packets labelled for the lake ports to a special box kept in the freezing chamber of the s.s. " Liemba." A fortnightly supply is included for Kigoma, and once a month a supply for Kasulu and Kibondo. The latter two are placed in the post, which leaves on the following Thursday.

In Kigoma the usual routine was continued of vaccinating all native labour locally recruited, and all Arab, Indian and native passengers for lake voyages unless they have been recently successfully vaccinated.

Each African District Sanitary Inspector and the Vaccinators were re-instructed during the year in the method of vaccinating, inspecting and recording results.

(2) *Chickenpox.*

At the beginning of the dry season cases were seen amongst the crews of all the Belgian boats using the port. These cases seemed to arise from an outbreak in the Belgian portion of the Territory. Some of the cases were severe and gave rise to some trouble in differential diagnosis, but further progress of them confirmed the diagnosis.

(*b*) Deficiency Diseases.

There is no special disease to report on under this heading. Bad dietitians as they may be, the local native enjoys a good mixture of foodstuffs, though their proportions and total amounts may not agree with a scientific diet for a working man, growing child, or child-bearing woman.

(*c*) Helminthic Diseases.

There is no change in the situation to report.

In Kigoma much has been done under the Township Rules to do away with many temporary structures, which include Asiatic latrines, and in replacing these many new pits have been dug, the old ones being filled in. Public latrines continue to be dealt with by the old incinerators. The inclusion in next year's estimates of a refuse lorry will enable the burning to be done on the edge of the Township instead of at various points inside, whereby a nuisance is caused.

Tæniasis.

Daily inspections of slaughtered meat continued to be carried out by the African District Sanitary Inspectors under supervision, and at intervals cysticercus infection is found and dealt with in the usual way. A condition of the liver in goats has been seen several times, showing small scattered hæmorrhagic and pustular areas. On these the Veterinary Pathologist, Mpwapwa, reports as follows :—

" Most of these spotty livers are most likely parasitic in origin, though most often it is impossible to find any trace of the culprit. Cysticercus are most often blamed and possibly occasionally pass through the liver to settle in the peritoneal cavity. It is always interesting to search amongst the viscera in these cases for the bladder stages. The organs in these cases are condemned simply for their unsightliness or unpalatability, being most often not dangerous to man, and the rest of the carcase, if healthy, is passed for consumption. A very fine tape-worm (a *Stilesia*) is very commonly found in goat livers in the bile ducts, and is so fine as to be overlooked. Here again condemnation of the liver only is resorted to."

These livers were burnt and the remainder of the carcases, being found healthy, were passed for consumption.

Schistosomiasis.

Cases seen during the year again all gave a history pointing fairly conclusively to the source of infection being outside of Kigoma District. The point is important from the public health standpoint, and special enquiry was made in every case.

II.—GENERAL MEASURES OF SANITATION.

Sewage Disposal.

No further trouble was experienced with the water-carriage system at the Residency, the fitting of small water-traps to the bath waste pipes last year having successfully dealt with the smells experienced.

The septic tank system of the railway houses gave rise to no complaints during the year. One complaint of effluvia, suspected as due to the system by a resident, was traced to native railway employees drying cassava in the sun. The removal of this dealt with the effects.

The pan and pail system for European quarters and public latrines was continued, and seemed satisfactory.

The Asiatic deep pit-latrines continued to be carefully watched, and several new pits were dug, and these and several old pits had new choo buildings erected over them. There are now very few needing attention, and these are only awaiting negotiations between the householders and contractors. In this respect the sanitation of the town has greatly improved during the last two years, due to the whole-hearted co-operation of the Township Authority and the example set at the beginning by a few Indians who demonstrated how much more convenient and attractive a compound could be made by attention to out-buildings.

Scavenging and Refuse Disposal.

The bazaar imported standard type dustbins, and every household, official and non-official, is now supplied. The disposal has not been so satisfactory during the year, owing to the breakdown of the transport and inefficient incinerators. Three new hand-carts have now been supplied. The provision of a motor refuse lorry has been estimated for for next year, and will be very useful for ordinary bin refuse as well as allowing, owing to saving of time, for the quick collection of rubbish cleared from the unoccupied plots at frequent intervals instead of on occasions.

Drainage.

The main central drain, completed early on, has effectively dealt with the storms experienced, but it is not thought that it has really been tested yet. Above the bazaar the extensions of the main scheme are being completed, and this is probably the core of the matter, as it is preventive, whilst the lower stretches simply deal with the sand and water on arrival. Up in this area much staking and building of drop and anti-overflow walls is being done. Some of the drop walls have already demonstrated their value and necessity, having filled well.

Water Supplies.

No disease was attributable during the year to the consumption of lake water, which takes place chiefly from two points, one the Railway Pumping Station in Mkwamba Bay, and the other in Kala Bay by hand drawing on the foreshore between the Customs and the Station. The former appears an excellent water, whilst the second is liable to any contamination from shipping in the harbour or from the clothes-washing and bathing which goes on close by from the foreshore of the Station Yard.

Offensive Trades.

There has been a small improvement in the position as a result of building notices issued under the Township Rules. Practically every house in the bazaar has some kind of store in which all manner of rat-attracting produce is kept at various times. A great many of these have been rebuilt now and made to conform to the rat-proofing rules as far as possible, and undoubtedly the town is safer than it was.

Sanitary Inspections.

As before, the Kigoma, Mwanga and Ujiji areas were split up into sections and each section visited at least once a week by a Native Sanitary Inspector, their work supervised

by Sanitary Inspector Sharma. In the railway area the Inspector was accompanied by the railway sanitary boy, and this was found effective in checking the latter's work. The markets were inspected twice a day and the boats on each entrance to the port as soon after pratique as possible.

III.—SCHOOL HYGIENE.

There are 108 children whose general health is good and who are inspected for their personal cleanliness every week; 358 children were treated during the year.

Blood slides of all the children were examined and no filaria or spirillum were found in them; 79 of the children were found to have enlarged spleen. A regular dental inspection was held and nine children had teeth extracted for caries.

There were four cases of schistosomiasis and on enquiry the parents all gave a history of infection in the Tabora District.

Ankylostomiasis alone or a mixed infection is still prevalent, but has been reduced from 91 per cent. of the total scholars in 1928 to 48 per cent. in 1929.

Jiggers are common and 11 cases were treated. Many ulcers of the toes were due to these fleas. There were 5 cases of scabies.

Table showing Worm Infection of the Scholars.

Ankylostomiasis	44
,, and tænia	1
,, and ascaris	3
,, and strongyloid	4
Tænia	1
Ascaris and strongyloid	2
Tricocephalus dispar	3
Strongyloid	1
Negative	49
Total	108

Training of Sanitary Personnel.

The rat catchers and mosquito finders trained last year did very well. New postings of African District Sanitary Inspectors were put to work in Kigoma before being passed out to out-stations. A boy from Ufipa was trained as a probationary African District Sanitary Inspector and posted at Kipili. A trained vaccinator was posted at Kala and another at Wapemba, and as a check on the work of these and the boy at Kipili, a trained African District Sanitary Inspector was sent down to travel up and down that part of the lake shore. An African District Sanitary Inspector remained at Malagarasi, but the one at Uvinza had to be removed for misconduct, being replaced later by another, and himself sent to Kibondo.

The African District Sanitary Inspector at Ujiji is under the direct supervision of this office and is working well with the Native Authority.

IV.—PORT HEALTH WORK AND ADMINISTRATION.

	1927.	1928.	1929.
Vessels entering the Port—			
Steamers and motor vessels	155	205	236
Tonnage	38,390	46,603	49,222
Dhows	15	37	36
Canoes	9		
Lighters	—	96	102
Tonnage	—	38,750	36,960
Vessels outward bound—			
Steamers and motor vessels	158	208	235
Tonnage	39,539	46,594	49,116
Dhows	16	36	40
Canoes	9		
Lighters	—	99	101
Tonnage	—	40,250	36,960

The increase in the use of the port continues, augmented by new motor vessels and increased number of visits of steamers. Continual inspections, conversations with the masters, and the correspondence with the Grands Lacs Shipping Company has improved the sanitary condition of the vessels using the port.

EXTRACT FROM A REPORT ON THE SANITATION OF LINDI TOWNSHIP.

By Dr. K. Edmundson, M.B., Ch.B. (Liverpool), Health Officer, Lindi.

Administrative.

Staff.—The Sanitation Staff averages 50, made up as follows :—

European—	
Health Officer	1
Sanitary Superintendent	1
Native—	
Urban Sanitary Inspector	1
Headman	1
Messenger	1
Mosquito finders	5
Latrine boys	9
Rat boys	2
General labourers	29
	50

HYGIENE AND SANITATION.

General Review of Work Done and Progress Made.

Preventive Measures.

Mosquito-borne disease.

Drainage.—No further change has been made in the present drainage of the town. The surface drainage will be discussed under Drainage.

The depressions to the north of the town are still present and are constantly under supervision and oil in the rainy season.

Wells.—In pursuance of the policy of the former Health Officer, no permits were issued to dig wells, and 39 insanitary wells were closed during the year.

It was found that the majority of mosquitoes were found in wells attached to mosques.

House Inspection.—The houses in Lindi, of which there are about 11,000, are constantly and regularly visited. The number of visits made by the Urban Sanitary Inspector and mosquito boys being 6,761 on an average per month.

This ensures a regular supervision of the cleanliness of houses and a prevention of the breeding of gross numbers of mosquitoes.

The total collections of larvæ were as follows :—

		Per cent.
Anopheline	16	0·9
Culex	444	25·7
Stegomyia	966	55·9
	1,426	

Prosccutions.—There were 38 prosecutions for allowing mosquito breeding on premises. All were convicted and fined.

Fly-borne disease.—The question of the disposal of refuse in the rains is still acute. The accommodation for the disposal of refuse being inadequate in the extreme, no cover being available for either incinerators or drying sheds.

At the end of the year the Public Works representative, having some corrugated iron sheets to spare, gave them to the Health Officer, and they were utilised to make drying sheds and covers for the incinerators.

It was noted at the commencement of the rains, with the consequent increase of rubbish and fly-breeding matter, that the number of cases of gastric disorder among the Europeans stationed in Lindi increased.

Pit Latrines.—These are a potential and a frequent source of fly-breeding. There are some 90 in the town. During the course of the year 300 collections of fly maggots were found. A large number came from these spots. For further points on this see report of *Sewage.*

Epidemic Diseases.

Plague.—There have been no cases of plague. Rat-catchers set daily a minimum of 60 traps, and the average catch is from 20–30 rats a day. Traps are on loan to the Police lines and prison, and are issued on request to out-stations. During the year 4,603 rats were killed in Lindi Town. The chief bait being *Mahogo.*

Smallpox.—There have been no cases of smallpox. An outbreak was reported from Mchinga, but on the advent of the Health Officer it was disclosed as varicella. The opportunity was taken to explain and instruct the African District Sanitary Inspectors on the use of the Variola and Varicella Cards.

Vaccination.

Number vaccinated in Lindi (all travellers in transit)	54
Number vaccinated in districts	2,297
Number re-inspected	2,199
Number successful	1,545

Relapsing Fever.

Two specimens of *Ornithodorus Moubata* were sent from Liwale, which was reported to be infested with tick. They were reported on by the Bacteriologist as being non-infected, but instructions were given to the Dispenser and the A.D.S.I. stationed there as to the best means of coping with these pests.

Water-borne Diseases.

The drinking water supply is regularly inspected. Further remarks on this question will be found later in this report.

So far there have been no pumps fitted to the public wells and, although little or no mosquito breeding takes place in them, the constant cleaning, necessitous from the natives using filthy jars and tins to draw the water, is a serious drain on labour, which could be utilised otherwise, and is also a loss of potential revenue.

General Measures of Sanitation.

Sewage Disposal.

The public latrines in the town are inefficient both in number and worth.

There is one permanent structure, which was described in the Annual Report for 1928. This is used very freely, and the general structure permits of easy cleaning and flushing with water and disinfectant. The need for better latrine accommodation cannot be too strongly urged, as from a sanitation point of view the town in this respect is woefully deficient.

There are about 90 pit-latrines in the Indian quarter which are regularly inspected for fly maggots. When a private latrine has been closed for any reason, the most stringent precautions are taken before permission is obtained to dig another.*

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* £1,800 has been provided for improvements during 1930–31.—A.H.O.

Refuse Disposal.—So great was the difficulty in the disposal of the refuse of cocoa-nuts after the husking of the nuts, that the Health Officer, in conjunction with the District Officer, instructed all shamba owners that they were responsible for the disposal of all refuse from their trees, and that, in the event of their not disposing effectively, by burning or other means, such as burying, proceedings would be taken against them. This had a pronounced effect on the amount of cocoa-nut refuse, with which the incinerators were unable to cope, to be burnt.

Clearing of Bush.—The additional vote rendered the assistance of the District Officer unnecessary, and the clearance of the bush and undergrowth proceeded with fair regularity. But it was noted that, though the work was carried on with what speed was compatible with efficiency, yet further labour could have been employed if funds had permitted, with advantage.

At the close of the year the Health Officer asked for an additional 2,000 shillings ; the rains broke early and in order to cope with the rush of grass and undergrowth more labour was thought to be essential. However, only 500 shillings were available, but they will go far towards keeping the town clear of excessive grass and bush.

Number of square yards of grass cleared in year..	1,260,160
Number of loads of refuse burned in year..	8,376

Sanitary Inspection.

Systematic daily inspections were carried out by the Urban Sanitary Inspector, the Sanitary Superintendent, and the Health Officer.

School Hygiene.—There is one small Indian school in the town. Nothing has been done in the way of alteration or extension during the past year. The premises are in a fair sanitary condition.

Housing and Town Planning.—The marking out of the plots and the supervision of the building of native houses was carried out by the Health Officer and the Sanitary Superintendent. On the erection of new houses the owners were induced to use more window space and not to keep what window space they had closed up.

Permits to build native huts	20
Permits to repair native huts	192

Township Authority.—The Authority consists of the District Officer as President, with the Health Officer as Executive Officer. The other officials on the Authority are the Surveyor, the Inspector of Works, P.W.D. There are also two non-official members. During the course of the year eight meetings have been held.

Food in relation to Health and Disease.

Meat.—All animals intended for slaughter are first inspected by the Health Officer, and after the meat is examined before sale. The lack of an abattoir is a serious bar to the efficient and proper supervision of the slaughter of animals and the prevention of the sale of tainted meat, but funds appear to be forthcoming in the new year for the erection of a proper abattoir.

Port Health Work and Administration.

No infected ships arrived in the port and no ships arrived from infected ports.

Vessels cleared during the year :—

Sailing vessels..	391
Steamers	97

SUMMARY OF A REPORT ON THE SANITATION OF MOSHI TOWNSHIP.

By Dr. W. J. Aitken, M.B., Ch.B. (Glas.), D.T.M. & H. (Liv.), Acting Senior Health Officer, Tanga.

Mosquito and Insect-borne Diseases.

The mosquito in Moshi is conspicuous by its absence, and one rarely, if ever, receives a complaint from a European regarding mosquitoes in his house. In the bazaar, however, mosquitoes are commoner, and I observed that nearly all were coming from an extremely primitive type of soakage pit.

These have been dealt with in a drastic manner, but with by no means a satisfactory result, for the reason that the geological formations underneath Moshi prevent one reaching a desirable depth for soakage ; that is to say, the petrified lava is at a depth of only 2 to 3 feet from the surface, and it is largely a matter of luck if one strikes a fissure or not.

Swamps.—The Township lies on a slope which runs towards the Rau River, and the bulk of the storm-water, instead of lying as it does in other Townships, runs or is drained off into the Rau River ; stone-built channels and road drains carry off the overflow which runs down under the railway and thence to the river. Consequently, swamps as such are to all intents and purposes unknown in Moshi.

Pools.—Digging for stones is prohibited in the Township except under a licence, a condition of which is that the site of the excavation shall be levelled after use. Removal of the ant-heaps is allowed, but watched.

I observed on my arrival a certain number of pits used by householders as refuse dumps, and it was thought that these might be ultimately filled in by regulated tipping of refuse. A large number of these pits are now filled in and closed down, but certain remain merely as depressions in the ground, and as they are naturally porous no water stands in them. Permanent pools do not exist.

Drains.—Throughout the years the storm-water has formed channels for itself, and to save unnecessary labour in cutting new drains these natural drains have been cleaned and straightened and connected up to the artificial stone channels at the roadsides.

Wells.—There are no wells in Moshi.

General.—Thorough and detailed anti-mosquito work has not proved possible owing to lack of staff, but the Railway Reserve, the haunt of the Moshi " Anophelinæ," is under constant supervision both from the railway staff and the Health Office. Each European was sent a circular showing how they could assist in keeping down mosquitoes, *e.g.*, not allowing tins, etc., to be thrown out anywhere. Early in July a collecting day was held, and all the " boys " were put on to unearthing all the old bottles, tins, scrap iron, etc., from the European and commercial areas, and with the aid of a motor lorry I was able to shift twelve loads of rubbish ; this has done away with a bad potential breeding-ground. New road drains and culverts are in the process of building, and the Health Office endeavours to clean out existing drains. Provided sensible co-operation on the part of the inhabitants and constant watchfulness on the part of the Health Office, I can see no reason why Moshi should ever get the unenviable reputation of being a " Mosquitoey place."

Cases of Malaria treated during the year.—European, 64 ; native, 3,867.

The vast majority of the European cases came from outside the Township, *i.e.*, from shambas. During my tour in Moshi from June I only know of one case definitely infected in the Township.

Blackwater.—Three cases of blackwater were reported during the year, all on shambas, and all of whom recovered. Six cases, with two deaths, of blackwater amongst Wachagga. Two similar cases were reported by Dr. Nixon from Tanga Gaol, both of whom had recently come from Moshi. All the Moshi cases displayed the same clinical symptoms as European cases, and one is at loss for a reason to account for these cases in a race apparently free from this disease.

Collections of larvæ found :—

Anopheles	2 (in May)
Culex	31
Stegomyia	8

No collections were found in August ; 17 collections in June.

Tick Fever.—Four cases of relapsing fever were treated in the hospital during the year. An outbreak at Kibongoto was reported by the Medical Officer i/c Tuberculosis Campaign, but I have been informed by the natives of all parts of the mountain that "Homa ya Papasi" has always been known to them. There is a danger, however, that imported Wanyamwezi and Wasukuma, coming as they do from heavily-infected parts, may help to increase the number of infected ticks.

Trypanosomiasis.—No cases were reported during the year and the "deflying" station at Sanya Bridge has been abolished.

Smallpox.—No cases were reported during the year, but there were several false alarms from the Masai Reserve, all of which I visited.

An opportunity was taken during the year to initiate vaccination in Masailand when the Masai were congregated at Sanya Bridge ; 1,900 primary vaccinations were done as a start.

Chickenpox.—Nine cases were reported, but the disease appears to be of a mild character with little or no tendency to spread.

Measles.—Only one case was seen, a Masai from the Reserve.

Plague.—No cases were reported during the year. In August a boy was set aside for rat-catching, and up to the end of the year 383 rats have been caught.

Cerebro-spinal Fever.—Five cases with five deaths were reported. This disease appears to be mildly endemic on the mountain, and there are doubtless many more cases which never come to light. There is always the danger, however, that one year it may burst out as a real epidemic.

Helminthic Diseases.

Ankylostomiasis.—One hundred and seventy-six cases were treated in the Moshi hospital during the year, with a total of 8 deaths. This disease is not prevalent on the mountain, or at least not so prevalent as tæniasis, but with the primitive sanitary arrangements of the Wachagga one fails to see why, unless it be that the temperature is not suitable.

Tæniasis and Ascariasis.—One may safely estimate that 90 per cent. of the Wachagga are infected with some form of intestinal worm. The Chagga is not at all fastidious about his meat and does not understand why certain portions are condemned, and will resort to all kinds of subterfuges to avoid having portions of a carcase removed. One thousand five hundred and seventy of ascariasis and 2,076 cases of tæniasis were treated during the year. Only one European case was reported.

Typhoid.—One imported European case and five native cases, with two deaths, occurred during the year.

Schistosomiasis.—Seven cases were treated during the year. This disease is extremely rare on the mountain, but is well known in Upare, where it is believed by the Wapare to be due to excessive eating of sugar-cane.

The Dysenteries.—

	European.	Native.	
Amœbic	6	89	Deaths—Nil.
Bacillary	1	—	
Undefined	5	4	

Deficiency Diseases.—No cases of these diseases came to light during the year.

General Sanitation.

The system of sewage disposal in Moshi varies in accordance with the portion of the Township. In all the newer houses and premises built by private firms or persons water-flush closets with septic tanks have been installed.

In most of the Government official quarters the old bucket system still remains.

The European and Native Hospitals have flushing systems installed, but there is one grave defect in that the washings from the operating theatres discharge direct into the septic tank, thus giving the antiseptic a chance to destroy any bacterial action therein.

In the bazaar and native areas pit-latrines are in vogue and are proving quite adequate, although the digging of them is often attended with the greatest difficulties. The new pit-latrine in the Market Square, built in May of this year, has had to be closed owing to its horrible smell, which defeated the combined efforts of three medical officers, three sanitary superintendents and the P.W.D. to mitigate it. A 13-foot vent pipe was tried without success, lime was put down, ashes were put down, but all failed, and there was nothing to do but to have it closed.

Water Supply.

The water supply of Moshi may be classed as excellent ; in fact, it is the custom to drink it unboiled. It arises from a spring and is collected at once in a reservoir adequately protected from outside communication, pumped to tanks, and thence by gravity to the European houses and offices.

In the bazaar and native areas there is another spring, but this supply has to be carried to the consumers in tins. A scheme for the improvement and piping of this supply has already been drawn out by the P.W.D. There is a further non-potable supply in the European residential area which is used only for the watering of gardens.

Refuse Collection.

Considerable improvements have been effected during the year by adopting a more systematic method of collection and with the assistance of the local inhabitants. Ox-transport cannot be used, as the animals become infected with trypanosomiasis. A motor lorry is being provided for use during 1930. Refuse is burnt in incinerators.

Sanitation in the District.

The district sanitation is in the hands of the African District Sanitary Inspectors stationed at Machame, Kibongoto, Kibosho, old Moshi, Marangu, Rombo and Mwika.

The peculiar feature of the mountain districts is that villages such as exist at the coast are not in evidence. Each family live in a banana grove, which is more or less sacred, and it is the custom to bury the deceased inside the huts, and after a year the body is exhumed and the bones laid out amongst the banana trees. Such customs are extremely difficult to eradicate, along with that of keeping the cattle, goats and fowls permanently in the houses occupied by living persons. The inspectors do their best to explain the evil of such customs, but as is usual with customs deeply rooted in the minds of people, it is an uphill fight.

A number of the inspectors are brothers of the Mangis, and this to some extent assists them in their work.

SUMMARY OF THE ANNUAL SANITARY REPORT FOR MWANZA.

By Dr. R. Mackay, M.B., Ch.B. (Aberd.), Health Officer, Mwanza.

I.—ADMINISTRATIVE.

Staff.

European.

Health Officer.
Sanitary Superintendent.
Health Visitor.

Asiatic.

Sub-Assistant Surgeon.
Asiatic clerk (part-time).

African.

18 African District Sanitary Inspectors.

II.—PUBLIC HEALTH.

(*a*) General Remarks.

A satisfactory standard of health was maintained throughout the province during the year under review, there having been no infectious diseases in epidemic form, although several sporadic outbreaks were reported.

African District Sanitary Inspectors were continuously employed during the year in the more important trading settlements, and although the indigenous population do not take kindly to the introduction of hygienic measures for the prevention of disease, it may be stated that progress is being slowly made in this direction, since the people in the outlying districts submit readily enough to vaccination, for instance, and even seek the protection which this measure affords in the presence of what they term smallpox (in reality chickenpox).

Sanitary Inspectors and Native Chiefs now understand their relations to each other, as far as the sanitary control of disease in their districts is concerned, better than hitherto, and although the population generally are averse to accepting any new measures—using pit-latrines, for example, this prejudice will in the course of time be overcome, once the people are sufficiently convinced that these measures are being introduced to prevent diseases likely to harm them.

(1) *General Diseases.*

The figures submitted by African Inspectors are not sufficiently reliable to quote for statistical purposes. It is therefore proposed to give only figures which are known to be more or less correct.

Ankylostomiasis.—It was found that 20 per cent. of the pupils at Kwimba School had hookworm ova in their excreta, and similarly at Ididi, where several thousand natives were engaged on bush-clearing in June ; out of 155 examined, 31 were found to be infected, *i.e.*, 20 per cent. (the figures are Dr. Fairbairn's and the examination was carried out by him). At Mwanza Central School the incidence is roughly 23 per cent. The examinations of pupils were carried out after the vacation, and it is assumed that infection took place in the districts. Quoting the hospital returns—out of a total sick list of 16,699 the number of hookworm cases was 348. The following are the figures for the last three years :—

Ankylostomiasis.—

	1927.	1928.	1929.
Cases	48	173	348
Percentage of total cases	0·37	1·3	2·0
Deaths	2	7	12
Percentage of total deaths	4·0	19·4	18·1

It is probable that the apparent increase in cases is due to patients suffering from ankylostomiasis reporting for treatment more than has previously been the case.

Schistosomiasis.—The percentage of bilharzia in school children in the district and in the Township is in the region of 15 per cent. The hospital figures for the last three years are as under :—

	1927.	1928.	1929.
Cases	73	213	526
Percentage of total cases	0·57	1·6	3·1

Smallpox and Vaccination.—There were no cases of smallpox during the year, although infections were frequently reported purporting to be smallpox, but which on investigation proved to be chickenpox.

Cerebro-spinal Fever.—Nil.

Plague.—Two outbreaks of plague were reported from the Musoma District during the months of April and November respectively, but this was not confirmed. The anti-plague measures taken were :—

April	Ikiza, 2,578 persons inoculated.
November	Mganza, 243 persons inoculated.

Quarantine control of roads and waterways was also exercised.

With regard to the seasonal incidence of diseases, it is noted that malaria appears to be at its worst during the months of June and July. The chart (not reproduced here), showing the case incidence and anopheline index for the last three years, gives an indication of this and also the fact that there is a definite period of delay in the appearance of the highest point in the malaria-case curve when compared with that of the anopheline-index curve—anopheline breeding being at its height in April and the highest incidence of malaria occurring during the period June–July.

(*b*) Vital Statistics.

Population : Mwanza Province.

District.	Year.	Europeans.	Asiatics.	Africans.
Mwanza	1927	106	1,997	418,266*
	1928	130	1,028	240,237
	1929	143	1,213	240,235
Kwimba	1927	45	601	*
	1928	39	197	175,743
	1929	55	188	183,668
Maswa	1927	9	241	184,201
	1928	22	130	211,865
	1929	30	190	211,865
Musoma	1927	37	251	199,520
	1928	48	173	180,136
	1929	40	130	190,000

Total—	
Europeans	268
Asiatics	1,721
Africans	827,757

* Includes Mwanza and Kwimba.

General native population : Township, 4,322.

	1927.	1928.	1929.
Births—			
Male	?	?	43
Female	?	?	36
Total	11	21	79
Birth-rate	2·54	4·85	18·27

The number of infant deaths recorded during the year is 12.

The causes of deaths under one year were as follows :—

Broncho-pneumonia	3
Prematurity	1
Intestinal conditions	1
P.U.O.	4
Complications in labour	1
Infantile diarrhœa	1
Congenital syphilis	1
Total	12

Infantile mortality rate : 151·8 per 1,000 births.

The greatest difficulty is being experienced in getting the native population (mostly Wasukuma) to notify births and deaths under a year, although arrangements have been made with the Local Native Authority to have this done monthly. Such figures as are quoted here are based on data obtained from the Maternity and Child Welfare Clinic and those which we have been able to get from the Native Authority, but they do not represent a true return of all the births and infant-deaths occurring in the Township. There are no figures available for 1927 and 1928.

III.—HYGIENE AND SANITATION.

(*a*) General Review of Work done and Progress made.

During the year under review a satisfactory standard of sanitation was maintained in the Township and district, particularly with regard to the control of mosquito-breeding ; the elimination of several nuisances, and other preventive measures such as vaccination, child welfare, etc.

(1) Preventive Measures.

Anti-mosquito work : Mwanza Township

Number of pools inspected and oiled	3,819
,, yards of drain cleared	52,670
,, tanks and barrels inspected	96,676
,, wells and pits	1,123
,, inspections of premises for mosquitoes	63,388
,, collections of mosquito larvæ	1,632

$$\text{Index } \frac{\text{collections} \times 100}{\text{inspections}} = 2 \cdot 7$$

		Percentage of total.
Number of collections of anopheline	632	38·7
,, ,, culex	907	55·6
,, ,, stegomyia	71	4·4
,, ,, megarhinus	22	1·3

Deficiency Diseases.—With the exception of one case of scurvy treated at the hospital, there were no deficiency diseases reported. The diet has been so much improved, particularly in institutions like gaols and schools, that these diseases are not seen in inmates of long standing.

Helminthic Diseases.—Eighteen per cent. of the deaths occurring at the hospital during the year were due to ankylostomiasis. The incidence of the disease, as far as one is able to judge, is about 20 per cent. in the districts. Native prejudice, at least in Mwanza Province, has interfered with the use of pit-latrines, although every endeavour is made through the medium of the Political Department locally, as well as through African District Sanitary Inspectors, to impress upon the population the necessity for pit-latrines as a preventive measure in hookworm disease. Mass treatment by carbon-tetrachloride has been carried out in certain districts, but very few, apart from the larger villages, use pit-latrines.

Schistosomiasis is also fairly common in the districts.

With regard to the prevention of these diseases, although one advocates the use of pit-latrines and deprecates the use of stagnant water as bathing places, since this advice is not acted upon, it becomes difficult to counteract the spread of infection. Once the objection to the use of the pit-latrine is made known, conditions may then be modified to meet the requirements which may be necessary to make the problem attractive to the local tribe.

Tæniasis is a rare disease in Mwanza Province ; very few cases of Cysticerus bovis are met with.

(2) General Measures of Sanitation.

Conservancy.—The methods of disposal of excreta at Mwanza are the pan-system and the pit-latrine. The pit-latrine is used practically only by the native population ; Asiatics have adopted the pan-system mostly. The reason for this would appear to be a question of expense, since the municipal tax payable by Asiatics in Mwanza is something like 5 per cent., they feel that no further outlay is desirable, and they therefore construct a pan-latrine, which has the advantage of being more permanent than a pit and ultimately cheaper. The pan-system is also in use in European quarters.

Night-soil is disposed of mainly by incineration. The excreta are mixed with rice-husks and the material thus burns readily and without nuisance. The conservancy gang is divided into two sections—one operating during the night in the native town and Indian

bazaar, the other early in the morning and dealing with public latrines, quarters and offices. The voided dejecta are covered with rice-husks in latrines in order to minimise the risk of pollution of foodstuff by flies. There is a large pit-latrine in the Police lines and a similar one at the Government School. The excreta from the gaol are disposed of by trenching.

Two pans are used in latrines, one for excreta and one for urine. The urine is disposed of by tipping into soakage-pits constructed at convenient points near public latrines and incinerators. The pit is filled with stone, covered over with gravel, and is fitted with a centrally-placed perforated drum for the reception of the urine. The drum—an empty " Izal " drum or kerosene tin—is filled with grass, which is replaced daily ; charcoal is used in these drums as a deodorant in some cases.

Apart from the fact that pan-latrines constitute a graver danger from the point of view of fly-borne diseases than does the properly-constructed pit-latrine, one does not advocate its use universally on account of the difficulty of obtaining labour for this particular work. There is also the objection that the whole organisation depends on the willingness or otherwise of the conservancy gang to carry out this work. Pit-latrines, properly constructed and in suitable soil, constitute the more desirable form of conservancy at the moment, in the absence of a water-carriage system.

There is a water-carriage unit in the railway station at Mwanza ; it appears to function satisfactorily.

Refuse Disposal.—Ox-transport is used for the collection of refuse, which is ultimately disposed of by incineration. Occupiers of houses and premises in the Township supply their own dustbins ; bins for public places are supplied by the Health Office, while similar receptacles for Government quarters are issued by the Public Works Department. There are seven Khartoum-type incinerators in the Township : they are very satisfactory in operation.

Water Supply.—Mwanza obtains its water from the lake. At present the supply is maintained by means of tanks at Government quarters and various receptacles of a similar nature at houses throughout the Township. The permanent tanks are of concrete and are fitted with a detachable cover, serving as a protection against mosquitoes, etc. This type of covering is unsuitable and should be replaced by a reinforced concrete cover with a removable wooden frame fitted with gauze wire and sealed in position with lime ; the lime seal could be broken for purposes of cleansing. Water is carried from the lake, there being no pipe system as yet. A permanent water supply is being considered by Government. The water is very soft—under 4 degrees hardness.

Drainage.—The drainage of storm-water in the Township is mainly natural : the main stream discharging into the lake collects the water from subsidiary earth drains. There are masonry drains and channels in the central part of the town to deal with storm-water.

Sullage is dealt with by means of soakage-pits. The subsoil water does not appear to interfere with the construction of pits, or drainage generally. There are two swampy areas on the lake shore on the north-east and south-east sides respectively. A year or two ago, incinerators were built in each of these areas with a view to filling-in, in the course of time. These swamps, however, do not provide the breeding foci for the most prevalent malaria-carrying mosquito in Mwanza ; they are too well shaded.

Inspections and other Sanitary Measures.—For purposes of inspection the town is divided into two areas, with an African Sanitary Inspector in charge of the mosquito and conservancy gang, the casual labour, etc., in each case. The European Sanitary Superintendent makes an inspection daily of each area, and nuisances are reported to the Health Officer for action. The daily report submitted by Inspectors is checked by the Sanitary Superintendent, and statements regarding nuisances, etc., are verified by a personal visit.

Such sanitary work as grass-cutting, drain-clearing, filling of holes, etc., is part of the daily routine.

Summary of Routine Work :—

Number of cartloads of refuse removed	10,054
,, collections of fly-maggots found	97
,, burials performed by P.H.D.	8
,, rats destroyed	25,087
,, houses inspected for nuisances	22,916
,, public latrines in use	11
,, incinerators in use	7
,, notices served for nuisances	141
,, prosecutions	17

The following cemeteries and places for the disposal of the dead exist in Mwanza :—

1 European cemetery.
2 Ishmailia cemeteries.
1 Mohammedan cemetery (Indians, Arabs, Natives).
2 African cemcteries.
1 Hindoo cremation ground.

School Hygiene.

The standard of health of the pupils attending the Government School is good. A medical inspection of pupils was carried out in the earlier part of the year. The various diseases and conditions met with were as here enumerated :—

Defects and Diseases :—

Dental defects	14
Tonsillitis	13
Vision : errors of refraction	11
Ear disease	Nil
Heart and circulation—	
Systolic bruit	1
Accentuated second sound-apical	1
Affections of the respiratory system	Nil
Nervous diseases (C.N.S.)	Nil
Enlargement of inguinal glands	11
Flat feet	1
Number vaccinated	73
Total number examined	92

Incidence of Helminthic Diseases in 113 *pupils examined :—*

		Percentage.
Ankylostomiasis	27	23·8
Schistosomiasis—		
S. hæmatobium	18	15·9
S. mansoni	8	7·0
Tæniasis	5	4·3

Minor ailments are treated daily at the school dispensary by the dresser in charge. Occasional visits are made by the Health Officer ; it has been possible to arrange for the Sub-Assistant Surgeon attached to the Health Office to visit the school frequently.

The accommodation provided in dormitories and class-rooms is adequate. The diet is satisfactory.

The conservancy system in use is the deep pit-latrine.

It has not been possible for the Health Visitor to attend the school dispensary on account of its distance from the town and owing to lack of transport.

Medical inspections of the following schools were also carried out :—

	Pupils.
White Fathers' School	45
Government School : Township	21
Indian School	95
Ishmailia Community School	63

IV.—HOUSING AND TOWN PLANNING.

The Township is well laid out, with the possible exception of the congested area in the Indian bazaar. This has now been dealt with by the Surveyor, and, having definite demarcation lines to go on, the present corrugated iron structures will disappear and will be replaced by houses in alignment. There is no space for native extension in the central part of the town, but along the main roads there still remain several building sites.

The Township boundary has not been defined as yet ; this is in abeyance pending Government's decision in the matter of Arab claims in the Kirumba area.

Housing conditions are satisfactory generally.

There are several " open spaces " in the Township, one of which is available as a recreation ground. Football and cricket are the games mostly played—Europeans, Asiatics and Africans having their own organisations for arranging games. The Goan community have a tennis court which they use frequently. The mission and town schools have the ground at their disposal twice weekly.

Summary.

Number of meetings of Township Authority held	17
,, plans approved in respect of houses of Western standards of sanitation	6
,, plans approved in respect of houses of Eastern standards of sanitation	38
,, permits to dig pit-latrines issued	83
,, ,, construct pan-latrines issued	16
,, orders to demolish native huts	20

V.—FOOD IN RELATION TO HEALTH AND DISEASE.

Periodic inspection of food exposed for sale in the bazaar is made, and any article of diet which is deemed to be unfit for human use is either surrendered or seized and destroyed. The staple diet of the local native is maize flour, which is sometimes supplemented by an addition of meat or fish. Bananas are a luxury, being obtainable here only at Ukerewe.

There is a market where native vendors sell foodstuff ; daily inspections are carried out and all nuisances dealt with.

Milk—this commodity is sold at the market daily. Prior to milk being exposed for sale, samples are roughly tested at the Health Office.

Meat—slaughtering is carried out daily at the abattoir under the supervision of the Veterinary Department. The blood and offal are discharged into the lake. Although no nuisance has resulted from this method, it could be improved upon by leading the blood from the sump at present in use into a soakage-pit, instead of emptying into the lake, and by burying the remainder of the offal.

Meat exposed for sale at the market is protected from flies by the use of cloths and meat-safes. An inspection is made daily and all nuisances are dealt with immediately. Cysticercus bovis is very rarely met with.

(*b*) Measures taken to Spread the Knowledge of Hygiene and Sanitation.

There were no additional Sanitary Inspectors trained at Mwanza during the year. A revision course of ten days' duration was held for African District Sanitary Inspectors in the district. Lectures on elementary hygiene were given at the Government school.

VI.—PORT HEALTH WORK.

Port Health Work in Mwanza is confined to the quarantine inspection of vessels arriving from other lake ports, and special measures in the event of plague or smallpox being reported from Kenya or Uganda, etc.

A return of shipping and tonnage for the last three years is given below :—

——	1927.				1928.				1929.			
	Inward.		Outward.		Inward.		Outward.		Inward.		Outward.	
	No.	Net Reg. Ton.	No.	Net Reg. Ton.	No.	Net Rcg. Ton.	No.	Net Reg. Ton.	No.	Net Reg. Ton.	No.	Net Reg. Ton.
Steamers	71	—	69	—	89	57,100	90	57,800	106	71,646	104	71,446
Dhows—												
Mwanza	—	—	—	—	—	—	—	—	1,002	?	1,002	?
Musoma	—	—	—	—	—	—	—	—	55	?	57	?
Kenya and Uganda	—	—	—	—	—	—	—	—	53	?	55	?

VII.—MATERNITY AND CHILD WELFARE.

The Maternity and Child Welfare Clinic at Mwanza, which has now been established just over a year, may be said to be popular with at least the African women of the Township ; those living outside are more reluctant to come into the clinic for confinement.

The building is not very suitable as a clinic on account of its lack of accommodation ; furthermore, a site actually in the native town would have been more suitable. The clinic building stands near the main hospital. A site has been provisionally selected for a clinic in the native town and the matter is now in hand, however.

VIII.—METEOROLOGY.

Meteorological observations are carried out by the Agriculture Department. The equipment includes wet and dry bulb thermometers.

IX.—SCIENTIFIC.

The following notes on mosquito-breeding in Mwanza have been included under this heading. They represent the result of observations carried out during the period June to December.

Notes regarding the successful treatment of a case of marasmus at the Maternity Clinic are also given here.

Notes on the Incidence of Anopheles at Mwanza.

In the course of ordinary routine anti-mosquito work at Mwanza, an endeavour was made to determine whether the majority of anopheles obtained in collections of larvæ were recovered from the actual lake-shore, which is well shaded by an abundant growth of papyrus, or from shadeless pools and casual water—met with frequently in the rainy season, in the shape of hoof-marks, puddles and similar collections of water exposed to the sun. The following table shows that the highest percentage of anopheles occurred in shadeless pools ; that casual water (also without protection from the sun) gives the next highest rate, and actual " bays " on the lake-shore, heavily shaded by the papyrus growth, least of all.

Table I.

——	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Per-centage.
Total collections (Anopheles) ..	53	18	40	26	66	78	69	350	—
Anopheles breeding on lake-shore	24	1	5	3	5	31	15	84	24
Anopheles breeding in pools ..	22	5	19	20	50	24	37	177	50·6*
Anopheles breeding in casual water	7	12	16	3	11	23	17	89	25·4

* Corrected to the first decimal place.

N.B.—For the purposes of this table " casual water " means small collections of water such as is found in puddles, sand-pits, depressions such as hoof-marks, etc.

An examination was made of 577 adult anopheles breeding in collections, during the period June to December, using the " Key to the Species " provided in " Anophelines of Tropical and South Africa " (Evans, 1927), and the majority were found to be *A. costalis*, several *A. funestus*, four specimens of *A. maculipalpis*, and one of *A. pharœnsis*, with several specimens—all male (which were not identified as the " key " is adapted for the recognition of female anopheles only), made up the total. The result of this test is as follows :—

TABLE II.

Species.	Number.	Percentage.	Total No. Examined.
A. costalis	200	34·7	—
A. funetus	89	15·4	—
A. maculipalpis	4	0·7	—
A. pharœnsis	1	0·2	—
Not identified	283*	49·0*	577

* Male specimens.

The following table shows the actual number of anopheline mosquitoes found in specimens (collections of larvæ) and the percentage of female *A. costalis*, month by month ; those unaccounted for chiefly comprised male anopheles—*A. funestus*, etc., as enumerated above :—

TABLE III.

——	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Average Percentage.
Number of Anopheles breeding in collections examined	53	41	64	69	73	125	152	—
Percentage of *A. costalis* (female)	38	26	34	39·1	30	37	39	34·7

TABLE IV.—TOTAL COLLECTIONS : ALL MOSQUITO LARVÆ CAUGHT.

——	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Total number of collections	134	94	110	95	207	218	193	1,051
Number of Anopheline collections	53	18	40	26	66	78	69	350
Percentage of Anopheles in collections	39·5	19·1	36·4	27·4	31·9	35·8	35·8	33·3

The foregoing table shows the percentage of total anopheles occurring in monthly collections ; the figures are based on the examination of adult mosquitoes breeding in total collections.

TABLE V.

——	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Average Percentage.
Number of adult mosquitoes caught in native dwellings	166	97	159	173	216	140	160	—
Percentage of *A. costalis* (female)	70·4	74	23·2	46·2	37	43	41·3	47·8

Table V represents the percentage of female *A. costalis* occurring in collections of all mosquitoes caught in native dwellings. Anopheles would appear to have a preference for native abodes, irrespective of whether those are ordinary native huts with dark interiors,

or the quarters provided for servants at European houses ; whilst several adult anopheles can always be found in premises occupied by native servants, the occurrence of mosquitoes in the near-by European dwelling is relatively rare even when these are unprotected by gauze.

On referring to Table I it will be seen that 76 per cent. of anopheles breed in pools and in casual water, and not on the actual lake-shore. Since 83·7 per cent. of those are *A. costalis* (*vide* Table II—34·7 per cent. female *costalis* and 49 per cent. male—assumed to be *costalis* since this is the most prevalent species found in collections), it may be inferred that the growth of papyrus interferes with the breeding of the sun-loving *A. costalis*—shade being inimical to the development of this species. Of the 24 per cent. breeding on the lake-shore, in shaded " bays " (the larvæ were found in places actually exposed to the sun) ; no single collection was found in water protected by shade. If the anopheline incidence during the corresponding period in 1927 is compared with that during the period at present under consideration, it will be found that the curve of anopheline collections (not reproduced) runs an independent course, having no relation to that of the rainfall for that particular period—the maximum breeding taking place with the rainfall at zero. The curve for the corresponding period in 1929, however, tends to follow the rainfall curve for the same period. The anopheline incidence in the case of the latter would appear to depend more on the rainfall (casual water) than in the case of the former, where maximum anopheline breeding occurred in the months with least rainfall. There must, therefore, have been more breeding foci in the 1927 period—independent of rain, and since it was then the practice to remove papyrus from the lake-shore (since discontinued), it is reasonable to suppose that this measure facilitated anopheline breeding.

In the second chart (not reproduced) is provided correlation between the incidence curves of *A. costalis* percentage in native houses and the rainfall. No special treatment with larvicides is responsible for the sudden lag in the month of August ; routine oiling was maintained steadily for the period under review however.

The curve of the incidence of malaria roughly corresponds with that of the anopheline population of native dwellings. This, however, is less reliable, since it is probable that all cases of malaria do not report for treatment. There is a coincident rise in the malaria-incidence curve following on the rise in that of the anopheline density in the months of July and October.

The relative humidity curve is shown as a matter of interest, since the percentage of saturation for August, September and October would appear to be the lowest obtaining at Mwanza, taking into consideration its geographical position on an isthmus in a large tract of water—a combination of facts which tend to maintain the relative humidity at a somewhat high percentage. The figure quoted, *i.e.*, 72 per cent., is within the limits of a " comfortable humidity " in temperate climates.

Notes on a Case of Marasmus Treated at the Maternity and Child Welfare Clinic, Mwanza.

An African female child, 4 months old, weighing 5½ lb., was admitted to the Welfare Centre on 9th July, in an advanced state of emaciation. The infant was suffering from severe diarrhœa, œdema, and was in a comatose condition. The treatment instituted was as under :—

On admission	3 oz. whey with 2 minims brandy every 4 hours for a week.
	Weight, 5 lb. 12 oz. Stools : Greenish.
2nd week	1½ oz. whey.
	1½ oz. milk (cow's).
	2 oz. water—5 oz. every 4 hours.
	Weight, 5 lb. 15 oz. Stools : Normal.
3rd week	2 oz. whey.
	2 oz. milk.
	¼ oz. sugar.
	Mag. sulph. (a trace).
	2 oz. water—6 oz. every 4 hours.
	Weight, 6 lb. 2 oz, Stools : Normal.

4th week	2½ oz. whey. 2½ oz. milk. ½ oz. sugar. 3 oz. water—6 oz. every 4 hours. Weight, 6 lb. 12 oz. Stools : Normal.
5th week and 6th week ..	Same mixture as for 4th week. Weight, 6 lb. 15 oz. Stools : Normal.
7th week	4 oz. milk. 4 oz. water. ½ oz. sugar—8 oz. every 4 hours. Weight, 7 lb. 12 oz. Stools : Normal.
8th week	Same mixture as 7th with the addition : Orange juice, ½ oz. per diem. Weight, 7 lb. 15 oz. Stools : Normal.
9th week	3 oz. water. 5 oz. milk. ½ oz. sugar—8 oz. every 4 hours. Weight, 9 lb. 3 oz. Stools : Normal.

Result.—Disappearance of symptoms of malnutrition and infant gaining weight. The mother brought this child to the clinic subsequently—every week for a further period of two months ; there was a steady increase in weight and the infant looked healthy.

SUMMARY OF ANNUAL SANITARY REPORT FOR TABORA.

By Dr. A. V. Clemmey, M.B., Ch.B. (Oxford), M.R.C.S., L.R.C.P. (London), Health Officer, Tabora.

ADMINISTRATIVE.

Average Staff.

European :—

1 Health Officer.
1 Sanitary Superintendent (2 for 4 months).
1 Sister and Health Visitor (2 for 6 months).

Asiatic :—

1 Sub-Assistant Surgeon.

African :—

1 African clerk.
3 Probationary African Urban Sanitary Inspectors.
38 African District Sanitary Inspectors : 18 Tabora District, 9 Nzega, 5 Kahama, 6 Shinyanga.
128 Sanitary labourers.

PUBLIC HEALTH.

(*a*) General Remarks.

There has been no special sickness during the year, and the health of the people has been rather better than usual. This is possibly due to the relatively low rainfall. There is also a diminution of the population of the Township, and so a lessened congestion of people in the houses. This is in part due to the railway to Mwanza having lessened the importance of Tabora as a trading centre and also the severe drought of the latter months driving out a number of natives in order to obtain water.

Malaria continues to flourish even during the dry months and relapsing fever is also constantly with us. During the year there was no serious outbreak of epidemic disease ; sporadic cases of chickenpox, influenza, and one case each of cerebro-spinal meningitis, typhoid and smallpox (Kahama) were, however, reported. The standard of sanitation in the district and province was maintained and is improving gradually. Hookworm disease seems relatively mild, but urinary schistosomiasis is very prevalent.

(*b*) Vital Statistics.

Population.—The following figures obtained from the Administrative Department show the estimated population for the years 1927, 1928, 1929, in the districts of the Tabora Province.

Year.	European.	African.	East Indian.	Chinese and Malay.	Mixed.
Tabora District—					
1927..	250	184,000	1,500	Nil	100
1928..	254	179,000	2,360	—	—
1929..	262	182,918	2,360	—	—
Nzega District—					
1927..	17	153,500	150	Nil	300
1928..	20	121,685	510	—	—
1929..	21	121,536	456	—	—
Kahama District—					
1927..	22	75,868	18	Nil	15
1928..	29	80,034	112	—	—
1929..	29	79,502	102	—	—
Shinyanga District—					
1927..	35	144,450	90	Nil	130
1928..	65	149,109	239	—	—
1929..	54	158,185	625	—	—

Tabora Township. Estimated Population, 1929.

	European.	Asiatic.	African.	Total.
Male	117	1,200	3,000	4,317
Female	63	500	6,000	6,563
Total	180	1,700	9,000	10,880

General European Population. Population, 180. *Tabora Township.*

	Male.	Female.	Total.
Births—			
1927	4	3	7
1928	4	4	8
1929	9	3	12
Deaths under 1 year—			
1927	Nil	Nil	Nil
1928	—	—	—
1929	—	—	—
Deaths at all ages—			
1927	2	2	4
1928	3	—	3
1929	1	—	1

Nil infantile mortality figure is given, as there were no infant deaths (European) during 1929.

The European death in 1929 was due to injuries (railway).

Annual Death-rate.

1927	16·0 per 1,000.
1928	11·4 per 1,000.
1929	5·5 per 1,000.

One European death occurred in Tabora District due to injuries (elephant).

The foregoing data refers to Tabora District only, and do not include figures for Shinyanga, Kahama nor Nzega.

Asiatic Population. Population, 1,700. *Tabora Township.*

	Male.	Female.	Total.
Births—			
1927	14	10	24
1928	12	4	16
1929	15	11	26
Deaths under 1 year—			
1927	7	1	8
1928	6	4	10
1929	4	2	6

Causes of deaths under 1 year for 1929 are :—

Pneumonia	1
Malaria	2
Fever (P.U.O.)	2
Diarrhœa	1

Infantile mortality rate :—

1928	62·5 per 1,000 births.
1929	230·1 per 1,000 births.

Still-births notified and not included above :—

1928	4
1929	5

Deaths at all ages—	Male.	Female.	Total.
1927	20	7	27
1928	10	8	18
1929	15	9	24

Annual Death-rate.

1928	10·5 per 1,000.
1929	14·1 per 1,000.

General Native Population. Population, 9,000. *Tabora Township.*

	Male.	Female.	Total.
Births—			
1927	61	65	126
1928	35	54	89
1929	48	64	112
Deaths under 1 year—			
1927	24	23	47
1928	21	17	38
1929	21	7	28

Infantile mortality rate :—

1927	382
1928	426
1929	250

Still-births notified and not included above for 1929, 6.

Deaths at all ages—	Male.	Female.	Total.
1927	133	131	264
1928	133	133	266
1929	145	99	244

Annual Death-rate.

1927	19 per 1,000.
1928	29·5 per 1,000.
1929	27·1 per 1,000.

General Native Population : Tabora Province.

It must be understood that the following lists of births and deaths and causes thereof are as ascertained and reported by the African District Sanitary Inspectors. These men only get figures from their own areas, and their returns do not, therefore, include every village of the districts. The figures given for the population of the districts is that supplied by the Provincial Commissioner and includes all villages.

Tabora District (excluding Township). Population, 1929, 173,918.

	Male.	Female.	Total.
Births	371	355	726
Deaths under 1 year	76	62	138

Infantile mortality rate :—

1927	174 per 1,000 births.
1928	120 ,, ,,
1929	190 ,, ,,

Still-births not included above, 6.

Deaths at all ages—	Male.	Female.	Total.
1927	801	419	1,220
1928	422	383	805
1929	426	445	871

Annual death-rate for 1929, 5 per 1,000.

Shinyanga, Kahama and Nzega Districts (A.D.S.I. Reports).

1929.	Shinyanga.	Kahama.	Nzega.	Total.
Population by P.C.	158,185	79,502	121,536	359,223
Births—				
Male	248	174	836	1,258
Female	188	137	824	1,149
TOTAL	436	311	1,660	2,407
Deaths under 1 year—				
Male	43	6	180	229
Female	54	3	175	232
TOTAL	97	9	355	461
Infantile mortality rate per 1,000 births	222	29	214	192
Still-births not included above	Nil	Nil	Nil	Nil
Deaths at all ages—				
Male	124	198	735	1,057
Female	106	106	690	902
TOTAL	230	304	1,425	1,959
Annual death-rate per 1,000	1·5	3·8	11·7	5·5

Vital Statistics, 2nd K.A.R., Tabora.

These are not included in the Tabora District or Township figures.

Native Personnel : Average Number, 419.

	Male.	Female.	Total.
Births—			
1927	31	24	55
1928	36	28	64
1929	20	36	56
Deaths under 1 year—			
1927	5	9	14
1928	11	4	15
1929	2	3	5
Infantile mortality rate per 1,000—			
1927	161	375	254
1928	306	145	234
1929	100	83	89
Deaths at all ages—			
1927	6	13	19
1928	15	6	21
1929	2	4	6
Death-rate—			
1929	4·8	9·5	14·3

III.—HYGIENE AND SANITATION.

A.—General Review of Work Done and Progress Made.

(1) *Preventive Measures.*

Mosquito and Insect-borne Diseases. Anti-mosquito Measures: Tabora Township:—

Number of areas inspected by mosquito finders	726
Total number of collections of Anopheline larvæ found	76
,, ,, ,, Culex larvæ found	351
,, ,, ,, Stegomyia larvæ found	294
,, ,, ,, all mosquito larvæ found	721

Houses and compounds:—

Number of premises inspected	36,305
Number of collections of Anopheline larvæ found	21
,, ,, Culex larvæ found	247
,, ,, Stegomyia larvæ found	276
Total of collections of mosquito larvæ found	544
Percentage of premises breeding larvæ	1·50
Cess- and soakage-pits inspected	36,711
Tanks and barrels inspected	74,382
,, ,, oiled	827
Number of notices served for mosquito nuisances	384

Drains and wells:—

Number of drains inspected	880
,, ,, oiled	328
Number of wells inspected	1,819
,, ,, oiled	1,016
Number of collections of Anopheline larvæ found	42
,, ,, Culex larvæ found	73
,, ,, Stegomyia larvæ found	8
Total collections of mosquito larvæ found	123

Pools and open spaces:—

Number inspected	199
Number oiled	115
Number of collections of Anopheline larvæ found	13
,, ,, Culex larvæ found	31
,, ,, Stegomyia larvæ found	10
Total collections of mosquito larvæ found	54
Yards of drains cleaned	24,000
,, ,, dug	400
Number of holes filled in cubic yards	238
Number of gallons of kerosene used	105

Mosquito larvæ incidence:—

Total of all collections of mosquito larvæ found	721
,, ,, inspections for mosquito larvæ	113,991

$$\text{Index} = \frac{\text{collections} \times 300}{\text{inspections}}$$

	1928.	1929.
Anopheline index	1·5	0·066
Culex index	2·3	0·309
Stegomyia index	0·9	0·258
Mosquito index	4·7	0·633

The need for an increased number of masonry drains and the provision of a recognised place for sand digging, to prevent the digging of holes in the bottoms of the present drains by the P.W.D. and others, is still as important as ever.

Anti-mosquito Measures, Tabora Province, excluding Tabora Township.

——	Tabora.	Shinyanga.	Kahama.	Nzega.
Areas inspected by mosquito finders	315	187	90	1,730
Total of collections of Anopheline larvæ found	1,532	1,076	118	1,598
,, ,, Culex larvæ found	2,081	1,407	166	2,282
,, ,, Stegomyia larvæ found	1,808	840	66	1,039
,, ,, all mosquito larvæ found	5,421	3,323	350	4,919
Houses and compounds—				
Number of premises inspected	58,865	13,816	17,201	41,944
Number of collections of mosquito larvæ	2,662	—	—	—
Percentage of premises breeding larvæ	4·52	—	—	—
Cess- and soakage-pits inspected	33,316	8,862	1,960	27,845
Tanks and barrels inspected	98,777	24,158	11,340	70,799
Tanks and barrels oiled	—	2	—	—
Number of notices served for mosquito nuisances	1,163	1,104	127	1,309
Drains and wells—				
Number of drains inspected	602	141	180	3,146
Number of drains oiled	—	10	—	—
Number of wells inspected	2,664	736	161	2,663
Number of wells oiled	—	10	—	—
Total of collections of all mosquito larvæ	1,310	—	—	—
Pools and open spaces—				
Number inspected	1,559	651	333	2,429
Number oiled	—	32	3	—
Total of collections of all mosquito larvæ	1,449	—	—	—
Yards of drain cleared	250	—	—	—
Yards of drain dug	66	—	—	—
Number of holes filled in	267	162	35	29

Out-districts improve slowly under instruction from African District Sanitary Inspectors, but as the time of the rains is also that of the cultivation of the fields, the Provincial Commissioner requests that grass cutting, etc., be discouraged at this season, especially as there has been famine in certain parts of the Province during the year, and also soil erosion, owing to the grass, etc., not being allowed to go to seed, causes anxiety at Shinyanga.

Malaria.—The Senior Medical Officer, Tabora, states that 1,310 cases of malaria were treated at the hospital during the year.

Of that total, 39 were Europeans.

Two Asiatics died of malaria.

Blackwater Fever.—Seven cases were reported (three in Europeans), with one Asiatic death ; there were three cases in 1928 and 22 in 1927.

Epidemic Diseases.

Influenza.—Eight cases were notified by the Senior Medical Officer during December.

Smallpox.—One case was notified in the Kahama District in February. A large proportion of the natives have now been vaccinated throughout the Province by the A.D.S.I., 71,727 having been done in town and districts during the year. The Health Visitor, Nzega, has also vaccinated some thousands of women and children in her district.

One hundred and seventy-two travelling permits were issued by the Health Office.

Chickenpox.—Sporadic cases occurred throughout the year, especially in Shinyanga and Nzega Districts. Twenty-five cases were reported at the Shinyanga School in December. Two cases only were notified in Tabora town.

Deficiency Diseases.—No cases were reported during the year.

Ankylostomiasis.—

Number of cases reported (in town)—

1927	29
1928	56
1929	72

Number of deaths reported (in province)—

1927	170
1928	267
1929	500

Three hundred and ninety-two patients were treated in their areas by African District Sanitary Inspectors.

Tæniasis.—Sixty-one cases were reported during the year.

Thirty-three cattle were condemned for Cysticercus bovis. See Abattoir report under "Food."

Schistosomiasis.—Two hundred and forty-seven cases were reported from the hospital during the year.

Two cases were treated at the Maternity Clinic during the year.

Three collections of Bullinus Snail were made in the Township during the months of May and July.

(2) *General Measures of Sanitation.*

Sewage Disposal.—The native and Indian dwellings generally have pit-latrines.

There are four permanent public latrines for natives in the Township, one having been erected and two rebuilt during the year. The excreta are disposed of by trenching and incineration.

There are water-closets in 117 out of 121 European officials' quarters. Considerable inconvenience has been caused by there being insufficient water during the last five months of the year to allow of the cisterns being used to flush the closets.

Refuse Disposal.—Refuse is collected by four ox-carts and by hand-carts, and conveyed to the various incinerators of the township for destruction.

The following is a Summary of Conservancy, etc., Work done :—

Tabora Township—	1928.	1929.
Latrines ordered to be dug	835	147
Collections of fly-maggots found	591	12
Cartloads of refuse removed	4,347	3,696
Dumps of refuse removed	—	1,135
Rats caught	160	238
Burial permits issued	510	279
Burials performed	—	56
Collections of Spirillum ticks found	43	28
Gallons of disinfectant used	56	37
Choked drains cleared	—	7

Tabora Province (excluding Tabora Township)—

	Tabora.	Shinyanga.	Kahama.	Nzega.
Collections of fly-maggots	1,594	88	493	3,593
Latrines ordered to be dug	6,330	2,801	2,758	4,289
Dumps of refuse removed	7,082	1,364	1,573	4,628
Rats caught	688	380	205	777
Burials authorised	871	230	304	1,425
Collections of Spirillum ticks	339	44	—	2,938
Nuisances (non-mosquito) recorded	1,886	637	788	3,087

Drainage.—The need for masonry drains in the Chemchem and Kitete areas of the Township is still pressing. These two areas, with their bad earth drains and swamps, produce anopheline mosquitoes for the major part of the year. A great deal of labour is spent on trying to keep these areas moderately free from mosquitoes.

There are a few masonry drains running alongside main roads of the Township.

The drainage of the area of the Township administered by the railways is good, masonry drains being in use.

There is no subsoil drainage in the Township.

Water Supplies.—There has been a severe shortage of water during the latter part of the year.

The Government quarters are supplied by the P.W.D. from three wells in the Kitete valley. The water is pumped into storage tanks placed at a point sufficiently high to supply the highest points in the Township, K.A.R. and school by gravity. The tanks have an approximate capacity of 24,000 gallons, little more than a day's supply. There is no filtration system and the water is of a thick pea-soupy appearance.

Water is supplied by the P.W.D. also to one stand-pipe at the market at a cost of two cents per 4-gallon tin. This supply was cut off on a large number of days during the latter half of the year, and the natives were forced to depend on the town wells.

For the last four months of the year, water was supplied to many of the Government quarters by cart, the pipe supplies being cut off. No European official, however, got less than six tins of water per day on the average.

In December the P.W.D. had to use water from other shallow earthen holes on the Township outskirts ; this was supplied to houses by cart.

The town wells, all of which are uncovered, gave insufficient water when the P.W.D. supply to natives was cut off, and a number of natives had to leave the Township to obtain water.

There are a few private wells in the town, most of which are imperfectly cemented, near to cess- or soakage-pits, and none is more than 30 feet deep. There are 20 public wells in the town ; many of these were dry during the drought.

Cemeteries.—There are 17 cemeteries in the Township as follows :—

European	1
Asiatic	5
Native and Arab	4
Mission, R.C., Native	1
Arab, disused	2
German, disused	1
Belgian, disused	2
K.A.R., disused	1

All are kept in order under Health Office supervision.

Offensive Trades.—No offensive trades are carried on in the Township. There has been some difficulty at times in preventing the storage of small quantities of hides in flour stores and domestic premises, as the trade is small and the price low. There are four registered skin dealers.

Clearance of Bush.—The clearance of bush between the Boma and the railway was completed during the early part of the year.

Grass Cutting and Drain Clearing.—Has been undertaken as required.

K.A.R. Cantonment Sanitation.—The sanitary condition of the cantonment itself is very satisfactory.

The excreta and refuse are disposed of by incineration. The incinerator, however, is not of a good pattern, and during wet weather imperfect combustion has sometimes occurred, giving rise to unnecessary fly-breeding. Regular visits of inspection are carried out by the Health Office staff.

(3) *School Hygiene.*

The general health of the pupils at all schools in the Province had been satisfactory.

Government Central School, Tabora.—A daily sick parade is held by the S.A.S. attached to the Health Office. Minor ailments are also treated by the school dresser. The Health Officer paid frequent visits to the school throughout the year.

The new school building is still under construction, though a part had been occupied as dormitory and refectory by the end of the year. The following figures refer to the biennial inspection :—

Defects and Diseases found.

Eyes	1
Abnormally enlarged tonsils	6
Scabies	4
Enlarged spleens	16
Anæmia	1
Keloid	1
Ulcer	4
Deformed toes	1
Jiggers	1
Umbilical hernia	4
Inguinal hernia	1
Incompletely descended testis	1

Routine examinations of urine and fæces were carried out as follows :—

	Specimens examined.	Schisto-somiasis.	Ankylo-stomiasis.	Tæniasis.
1928	158	5	6	4
1929	208	22	2	Nil

There were 109 pupils examined during the second inspection.

Diseases Treated at the School Dispensary by S.A.S. or Dresser.

P.U.O.	77
Injuries	140
Ulcer	18
Diarrhœa	17
Gonorrhœa	6
Boils	4
Coughs and colds	48
Constipation	10
Tonsils and throats	18
Eyes	14
Ears	3

The following 26 cases were sent to the hospital for treatment :—

Ankylostomiasis	1
Schistosomiasis	22
Relapsing fever	1
Circumcision	2

Kisigo School.—Is visited regularly twice weekly by S.A.S. and Health Visitor.

The premises are of native type and are in very good order.

The following defects and diseases were found during the biennial inspections :—

Head affections (impetigo, etc.)	11
Eyes	5
Abnormal tonsils	5
Carious teeth	6
Ulcers	3
Anæmia	6
Enlarged spleens	22
Umbilical hernia	2
Schistosomiasis	11
Inguinal hernia	1

There were 84 pupils examined at the second inspection.

The eight private schools in the town are visited weekly by the Sister and Health Visitor. All are satisfactory.

Nzega School.—Is visited regularly weekly by the Sister and Health Visitor, who carries out a Medical Inspection also. There is a competent dresser in permanent attendance, who attends to minor ailments in general.

The premises are in good condition.

Shinyanga School.—There is a competent dresser for minor ailments.

The premises are in good condition and the sanitary arrangements are being satisfactorily attended to.

Cases of sickness have to be taken into Shinyanga Hospital, as the distance (6 miles) is too great to allow the S.A.S., who has no transport, to attend the school regularly.

(4) *Labour Conditions.*

Labourers engaged on public work within the Township work under favourable conditions with regard to medical treatment, hours of labour, etc.

There were no cases of deficiency diseases amongst labourers during the year.

Labour recruitment is carried out in Tabora Township ; all recruits are medically examined at the hospital.

(5) *Housing and Town Planning.*

Township Authority ; Summary of Work.

Number of meetings during the year	.. ..	6
,, permits issued for sale of food, etc.	.. .. ..	334
,, building plans approved	.. ..	Nil
,, permits to alter and repair buildings	.. ..	12
,, ,, build native huts	.. ..	40
,, ,, repair native huts	.. .. ..	318
,, ,, dig pit-latrines	.. ..	147
,, ,, erect native kitchens	.. .. ..	83
,, orders to demolish native huts	.. .. ..	17
,, houses disinfected	.. ..	39
,, notices served by Executive Officer	.. .. ..	122
,, ,, M.O.H. (non-mosquito)	.. ..	264
,, prosecutions by Executive Officer	.. .. ..	4
,, convictions	.. ..	3

The Township Authority is composed of :—

The District Officer	President.
The Executive Engineer	Official Member.
The District Surveyor	,, ,,
The Health Officer	Executive Officer.

And two non-official members.

Meetings are held as required from time to time.

There are approximately 121 European dwellings, 200 permanent type commercial and Indian quarters, and some 3,500 native huts in the Township.

A permit to build, granted by the Authority, is required in all cases before either permanent building or native hut may be erected, and each case is carefully considered.

It is hoped that it may be possible during the coming year to have defined definite zone limits for European type, commercial type, and native building areas.

Recreation Facilities.

European.—Two golf courses : an average of 18 persons play daily. Seven tennis courts : five of which are in daily use. Cricket and football pitch played on weekly. Two clubs and a library are also well patronised.

Asiatic.—One sports ground for the railway area.

African.—K.A.R., Police and school possess their own grounds, which are frequently played on. The European football ground is also made use of periodically.

(6) *Food.*

All premises for the sale of foodstuffs have to be passed as suitable by the Executive Officer before permission is granted for the sale of foodstuffs therein. All food stores have been inspected during the year and nuisances found were remedied.

Five lots of unwholesome foodstuffs were surrendered and destroyed.

No cases of deficiency diseases were recorded.

The market is under the supervision of a market master ; he was an African for the first and an Indian for the second part of the year. The food is sold under satisfactory conditions. It is hoped in future that improvements may be effected in the fly-proofing of the meat market.

Sale of Milk.—All cattle Bomas are still outside the Township boundary, some at a considerable distance. There are between two and three hundred milk sellers who bring one or more bottles of milk into the Township for sale daily. Adequate supervision of all these sources of milk supply is impossible at present. Each milk seller, however, who comes into Tabora must be in possession of a permit from the Township Authority, and before this is granted the milk and containers are inspected at the Health Office. Samples and permits are also examined from time to time.

Undoubtedly a better system would be to establish a milk-collecting centre where all milk could be inspected each day.

Meat Inspection and Slaughterhouses.—All Township meat is slaughtered at the public abattoir at Mbugani, on the Township boundary, where good facilities are available. The meat is inspected under the supervision of the Stock Inspector and is carried to the market in accordance with Township Rules. Visits to the abattoir and regular inspections at the meat market are carried out from time to time by the Health Office staff.

The following is an extract from the Stock Inspector's yearly slaughter return at the Tabora abattoir for 1929 :—

Carcases inspected :—

Oxen	2,580
Sheep	72
Goats	2,161
Pigs	29

Fifty-three carcases were condemned for the following causes :—

Cysticercus bovis	33 oxen.
Emaciation	2 ,,
,, ...	1 sheep.
,, ...	9 goats.
Multiple abscess	6 ,,
Jaundice	2 ,,

In addition, 1,209 organs were condemned for various reasons.

B.—Measures taken to Spread the Knowledge of Hygiene and Sanitation.

Our energies in this respect have been mainly concentrated on the work of training African District Sanitary Inspectors. Weekly lectures were given by Dr. Meek, the Acting Senior Health Officer, at the Government School, and for a part of the year to the Railway Technical School by Mr. Bolton, Sanitary Superintendent.

C.—Training of Sanitary Personnel.

One class of seven men was trained between July and October. Two failed to pass the examination held at the end of the course, but five passed and were posted to A.D.S.I. stations as directed. Two men were also trained at the same time as Railway Sanitary Inspectors : one passed and one failed the examination held.

IV.—PORT HEALTH WORK.

Over 20 aeroplanes landed at Tabora Aerodrome during the year. Passengers were all Europeans and were inspected by an officer of the Health Department.

V.—MATERNITY AND CHILD WELFARE.

An additional ward was added to the Tabora Clinic building during the early part of the year and has proved very useful.

An ambulance was received during October and had run 650 miles by the end of the year ; it has been extremely useful to the Health Visitor.

The Nzega Clinic commenced work during February.

EXTRACT OF REPORT ON THE HEALTH OF TANGA TOWNSHIP DURING 1929.

By Dr. R. Nixon, M.B., Ch.B., D.T.M., D.P.H. (Liv.), and Dr. W. J. Aitken, M.B., Ch.B. (Glas.), D.T.M. & H. (Liv.).

Public Health.

The health of the local community during 1929 has been generally good.

Three European deaths were recorded, but all were imported cases. Two were acute appendicitis and one bacillary dysentery.

There has been no serious epidemic disease in town or province during the year. Five sporadic cases of enteric were treated in Tanga Hospital, four of which came from

different distant stations in the district. A few acute cases of bacillary dysentery were treated, one of whom, a safari infection, died.

There has been no smallpox in the province during the year.

European Morbidity.—One hundred and forty-eight Europeans received treatment at the Tanga Hospital, as compared with 165 in 1928, while the average sick time fell from 2·15 days to 2·00 days, and the percentage of sick to average residents fell from ·58 to ·54.

Six Europeans were invalided as compared with three in 1928, the cause being uterine fibroids, metrostaxis, metroorrhagia puerperal insanity, hepatitis and chronic intestinal ulcer. It will be seen from the average duration of sickness that the large majority of European cases were suffering from minor lesions in addition to the cases already referred to as deaths or invalidings. The most important European cases were 83 malaria, 4 enteric and 4 bacillary dysentery.

Asiatic.—The following are comparable figures of Asiatic officials over the last three years :—

	1927.	1928.	1929.
Population	96	100	149
Deaths	1	2	Nil
Invalidings	2	1	7
Cases of sickness	225	153	372
Average duration (days)	4·8	5·6	4·98

African.—The African births and deaths notified by Jumbes for town and district are 478 and 644, as compared with 599 and 753 in 1928. No reliance whatever can be placed on any of these figures, as the return omit large and varying quantities of births and deaths.

The following are comparable accurate figures for cases under treatment in Tanga Hospital :—

	1927.	1928.	1929.
Out-patients	14,626	10,269	7,764
In-patients	1,598	2,049	2,294
Total	16,584	12,318	10,058
Deaths	149	129	189

The majority of African sickness treated in the hospital has been due to minor injuries and disturbance of the alimentary tract.

The most important infections are ankylostomiasis, malaria and tuberculosis.

Infectious Diseases Hospital, January 1st to December 31st, 1929.

During the year the extension of the premises was reduced by the P.W.D. taking over about half of the grounds lying in front of the main block.

I am glad to state that no serious infectious diseases occurred either in the district or imported through the port ; and as such the cases at the hospital were mostly of tuberculosis of the lung and chickenpox, with two cases of measles and one case of mumps.

The figures are as follows :—

	1928.	1929.
Remaining	1	6
Admitted	85	80
Total	86	86

Results.

	1928.	1929.
Died	39	36
Cured and discharged	17	29
Relieved and discharged	10	8
Absconded	12	11
Transferred	2	—
Not relieved and discharged	—	1
Remaining	6	1
Total	86	86

The 86 cases treated at the hospital during the year are classified as follows :—

Tuberculosis pulmonis	57	Results given below.
Chickenpox	26	All cured and discharged.
Measles	2	,, ,,
Mumps	1	,, ,,
	86	

Of the tubercular patients, totalling 57 :—

Died	36
Relieved and discharged (apparently cured)	8
Absconded	11
Found no relief but discharged at his own request	1
Remained	1
Total	57

These tuberculous cases were all transferred cases from the Native Hospital, where they had remained for varying periods ; some for only a few days and some for months.

All the cases received at the I.D. Hospital in good time showed decided improvement, and were either discharged as apparently cured and fit for pursuing their usual occupation, or absconded.

Maternity and Child Welfare.

The clinics for this work are at Ngamiani, the Police Lines and the Central School.

In addition to daily visits to these three places, the sister has attended some in their homes.

The following cases have been seen during the last two years :—

	1928.	1929.
New cases seen by the Health Visitor (excluding school)—		
Women	1,629	2,866
Children	1,512	1,255
Cases attending Ngamiani Clinic—		
Women	1,340	888
Children	1,300	948
Cases at Police Clinic—		
Women	165	297
Children	182	397
Cases at Tanga School	1,666	1,440

Mosquitoes and Anti-Mosquito Work.

There was heavy rain during the months April to July, and the usual increase in mosquitoes accompanied and followed the rain. The year as a whole must be written down as a disappointment from the anti-mosquito point of view. While the incidence of mosquitoes in the houses was fairly low during the first four months of the year, the months accompanying and following the rains showed a house-infestation rather worse than that of last year. The general position is that, while the mosquito incidence is incomparably lower than in the immediate post-war years, the steady decrease of preceding years has not been maintained during 1929 and a little ground has been lost. The main factor was probably the inability, owing to the exigencies of the service, to place a European in charge of the anti-mosquito brigade during the wet months. The larval collections of the year are about 50 per cent. more than last year, but the increase is mainly in the Stegomyia collections : these collections generally consist of a few larvæ only and the Stegomyia adult in Tanga is rarely seen in the houses. The house-infesting mosquito of Tanga is *C. fatigans* in overwhelming preponderance, and it is probably a conservative estimate to say that 99 per cent. of the mosquitoes in the houses are of this species. The number of Culex larval collections of 1929 are about 20 per cent. more than those of 1928, and that figure approximately represents the increase in house-infestation. The collections of Anopheline larvæ are 109 only, as compared with 190 last year, and it remains a rare event to see an Anopheline mosquito in any Tanga house. It will be seen that, while the total larval collection figures show a 50 per cent. rise over 1928, the bare figures give

an exaggerated picture of the importance of the increase, which is founded mainly on a larger number of small Stegomyia collections.

The following is a summary of the mosquito-larvæ collections of 1929 :—

——	Culex.	Stegomyia.	Anopheles.	Others.	Total.
In tanks, barrels	945	1,967	10	50	2,972
In pots, jars, etc.	193	812	5	4	1,014
In wells, waterholes	313	80	20	8	421
In pits	255	11	2	9	277
In pools	205	65	49	14	333
In drains	286	149	19	12	466
In tins	101	282	3	13	399
In trees	5	111	1	5	122
In other casual water	27	116	0	1	144
TOTAL	2,330	3,593	109	116	6,148

	Per cent.
Culex	37·9
Stegomyia	58·4
Anopheles	1·8
Others	1·9

The comparative figures of 1929 and 1928 are as follows :—

——	1928.	1929.	Increase or Decrease.
Culex	1,976	2,330	Increase of 354 (*i.e.*, 18 per cent.).
Stegomyia	1,691	3,593	Increase of 1,902 (*i.e.*, 112 per cent.).
Anophelines	190	109	Decrease of 81 (*i.e.*, 43 per cent.).
Others	55	116	Increase of 61 (*i.e.*, 111 per cent.).
	3,912	6,148	Increase of 2,236 (increase, 57 per cent.).

The collections month by month compare with rainfall as follows :—

	Collections.	Inches of rain.
January	358	1·2
February	216	0·0
March	244	1·4
April	532	8·9
May	996	4·3
June	777	7·2
July	592	3·1
August	448	1·3
September	431	2·7
October	578	3·7
November	408	3·2
December	567	0·5

The mosquito index (*i.e.*, the larval collections per 100 inspections of premises) is 4·0 (151,512 inspections as against 6,148 larval collections).

The index month by month with the rainfall is as follows :—

	Index.	Rainfall (inches).
January	2·2	1·2
February	1·5	0·0
March	1·6	1·4
April	4·6	8·9
May	8·6	4·3
June	7·6	7·2
July	6·2	3·1
August	4·6	1·3
September	3·6	2·7
October	4·9	3·7
November	3·1	3·2
December	3·7	0·5

The index for the year (4·0) compares unfavourably with that of 1928 (2·4), the Culex index having increased from 1·2 to 1·5 and the Stegomyia from 1·0 to 2·3. The Anopheline index has fallen from ·12 to ·07.

Malaria.

The Anophelines of Tanga are few and largely confined to the fringes of the Township. Kisosora swamp is in the wet season a prolific breeding-ground, but I understand that a sum of money has been voted in the 1930/31 estimates for drainage.

Primary infections of Europeans in the Township are rare.

The Tanga Hospital return shows :—

	European.	Non-European.
1927	55	1,622
1928	78	1,394
1929	83	1,312

Of the cases confirmed microscopically, 295 were subtertian and 19 benign tertian.

Blackwater Fever.

Ten cases of this disease were treated in the hospital during the year. Two native cases, both Masai, were recorded in the gaol.

Filariasis.

Thirty-five cases came under observation, as compared with 73 last year ; 15 were cured by operation.

Tick Fever and Dengue.

No cases were recorded.

Smallpox.

No cases occurred during the year; 150 primary vaccinations were done in the school, all successful ; 490 travellers were done.

Anthrax.

No cases of this disease were reported during the year. A small outbreak amongst the cattle at Moa was reported, but no human cases occurred.

Tuberculosis.

The Tanga Hospital records are as follows :—

	Cases.	Deaths.
1927	80 (1 European)	18
1928	147 (3 European)	59 (2 European).
1929	98 (1 European, old case)	11 (not including I.D.H.).

Fifty-seven cases were admitted to the I.D.H. from the Native Hospital and 36 died.

Ankylostomiasis.

The following are comparative figures :—

	1927.	1928.	1929.
Total cases, Tanga Hospital	1,121	1,086	820
In-patients	129	75	39
Deaths	43	19	12
Cases at Welfare Clinic	137	90	130
Deaths reported by Jumbes	119	91	68

Schistosomiasis.

The figures from the hospital indicate a decrease ; 77 cases were treated as compared with 147 in 1928 ; 19 cases were admitted, with one death.

Yaws.

One thousand one hundred and nine cases were treated in the Tanga Hospital, as compared with 1,232 in 1928.

Plague.

No cases occurred during the year.

Rats Killed.

R. Rattus Rattus, 1,215 ; *R. Rattus Alexandrinus*, 565. Total, 1,780.

Venereal Diseases.

	1927.	1928.	1929.
Syphilis (cases)	398	310	207
Gonorrhœa (cases)	186	111	158

Port Health Work.

	1927.	1928.	1929.
Steamers cleared	283	357	349
Dhows cleared	864	674	642

No case of infectious disease entered the Township.

Slaughterhouse Return.

In the absence of Veterinary staff, the supervision of the abattoir and the meat inspection are carried out by this department.

The following are the 1929 figures :—

Animals slaughtered—	
Bullocks	2,532
Sheep and goats	3,553
Pigs	15
Carcases condemned and destroyed	9
Portion of carcases condemned and destroyed	1,514

Proposed New Works and Recommendations.

(*a*) A pipe-borne water supply of good quality is being laid down, and it is hoped it will be completed during 1930.

(*b*) Money has been voted for wharf repair and extension.

(*c*) The Tanga Hospital drainage system is undergoing reconstruction but nothing is yet contemplated for the bulk sewage disposal of the town.

(*d*) Money has been voted for repair of the Township roads.

(*e*) Four new Government houses have been completed, three houses and an office-block are in building, and five more are authorised. Three others have been completed by the Railway Department. Nine non-official buildings of European type have been completed and nine other houses are expected to be started on Ras Kazone in 1930. A few existing Government houses have received or are receiving repair, but much remains to be done.

(*f*) The Health Department has cut down many old and unsightly trees and has planted young acacias in some of the gaps in the street avenues. No member of the staff claims to be a trained arboriculturist, and the growth of the new trees has not been very satisfactory.

(*g*) The repair and reconstruction of the storm-water drainage system require money and labour not at present available.

(*h*) The electric lighting is on the up grade, though still leaving much to be desired. At the time of writing, some of the old wooden poles are being replaced by iron standards.

(*i*) It is understood that a motor lorry for refuse collection will be provided in 1930.

Housing and Town Planning.

The outstanding feature of the town planning of Tanga during 1929 has been the opening of Ras Kazone as a residential area. At the end of the year two Government houses on the cape are in occupation, three others in building, and four others authorised. Nine plots have been acquired at auction by non-officials, and although only one of these houses is yet in building, other plots have been cleared, and the remaining eight are

expected to be commenced in 1930. The Ras Kazone area has many features to commend it for residential purposes. Almost throughout the year it receives a breeze from the sea; it is as yet entirely free from mosquitoes and the ground is not riddled with the defective sewage-pits of the present town. On the other side of the balance at present are the facts that the only water supply as yet available for the new houses is brackish, and until the new main is laid down residents will be obliged to have their water carried to them by car from Tanga; there is no electric light, and the distance from the present town and markets causes some staff difficulties and additional expenses. The water and light deficiencies will probably be rectified in 1930. It is to be regretted that a sewage-disposal system with outfalls into the sea could not have been inaugurated with the erection of the first houses for the cape appears to have the necessary physical features.

The Township Authority have recommended the division of Tanga Township into three zones: (*a*) Ras Kazone (*i.e.*, area east of the wharf railway cutting) for residential buildings of European type; (*b*) an area north of the main railway line for residential and industrial buildings of non-native type; (*c*) an area south of the main line for native buildings. It has also been recommended that the new market scheme, first mooted in 1923, should be carried out; a new market to be erected on Government land west of Pangani Road, which would allow the duka trade to become concentrated rather than to struggle along Fundi Street, Akida Street, etc., as at present.

A house-to-house survey of the native town is needed. Aeroplane photographs have been taken but are not yet available.

Conservancy.

The advent of a motor refuse lorry which it is understood is in the estimates for 1930/31 will be of the greatest value to the Township. At present hamali carts and hand-drawn vehicles are the only method of transport. These carts can only be used in parts of the town where there is no sand, and in consequence Ngamiani has to be dealt with by burning the rubbish in the open spaces or even in the streets.

The department has dealt with the refuse with the minimum of expense and nuisance possible.

Twenty-three thousand three hundred and four cart-loads of refuse were burnt during the year.

Storm-water Drainage.

The storm-water drainage system is inefficient and in the native town requires almost complete reconstruction. Regularly certain areas of the town are converted into swamps and ponds after the heavy rains with the resulting loss to property and health. The most important crossing in the native town (Akida Street–Ngamiani Road) is impassable after heavy rain, being flooded to a depth of 3 or 4 feet.

Until the Ngamiani drainage is remodelled, periodical flooding is certain, and any attempts at road-making rendered abortive.

Food in Relation to Health.

The arrival of an extra Sanitary Superintendent has enabled the department to increase the number of inspections of foodstuffs, consignments of foodstuffs at the wharf, etc. One thousand and eighty-two lots have been condemned and destroyed during the year.

Educational.

Propaganda on health and preventive medicine has been carried out in the district during the year by the African District Sanitary Inspectors stationed in the larger villages and visiting the small ones.

The Health Visitor pays regular visits in the town and immediate villages to instruct the women in the elements of maternity and child welfare.

A long safari was undertaken by Dr. D. B. Wilson in the Wadigo district, in which the inhabitants, besides being examined and treated, were instructed in the art of digging proper choos and the necessity for sanitation explained to them.

Government School, Tanga. 1st January to 31st December, 1929.

Total number of cases treated at the School Clinic :—

1928	1,666
1929	1,440

All these cases were only minor ailments. On the whole the health of the school children was good during the year. A marked appreciation of physical fitness and personal cleanliness was noticed among the older boys of the school. The number of enlarged tonsils noted during the year was very much less than last year, probably due to the great emphasis laid on oral cleanliness at the School Clinic.

One hundred and fifty primary vaccinations were done, and all took well. Two cases of chickenpox were observed among the school boys during October and were isolated at once. By the middle of November it broke out again, ten boys being laid up in two days. What threatened to be a serious epidemic was averted by the strict isolation of the cases, and prompt closing of the school for five days, from 15th to 19th November. Though there was a slight recrudescence of the disease even after the re-opening of the school, the whole school was completely free from any fresh attack within three weeks after the date of the threatened epidemic.

Dressers.

Three student dressers who were under training at the School Clinic passed their examination in September. Two of them have been engaged by the Health Department, and the other is ready to be sent out for estate dispensary work. Three more students have taken up their places, and Mattowa, the permanent dresser, is doing very useful work by coaching them up in a satisfactory manner.

Sanitation.

The sanitary condition of the school is very good at present. The old latrines were reconstructed and a system of effective flushing has been installed to replace the bucket-removal system. The water supply also has been improved during the year by shutting up the old well in the compound and erecting a small reservoir which is fed by means of a pipe from the railway workshop well, which is one of the cleanest sources of water supply for the town of Tanga.

IV.—PORT HEALTH WORK AND ADMINISTRATION.

The quarantine station for the sea ports of the Tanganyika Territory is at Zanzibar, and is well organised and equipped. During the greater part of the year there were two qualified Health Officers at Dar-es-Salaam and one at Tanga. Two additional Acting Health Officers at Dar-es-Salaam, one of whom was employed almost entirely on port work, and another at Mwanza. Medical Officers function as such at Bukoba, Kigoma and Lindi ; Sub-Assistant Surgeons at Bagamoyo, Kilwa, Mafia, Mikindani, Musoma and Pangani. It is the intention when qualified staff is available to post Health Officers at Kigoma, Mwanza and Lindi. There were no circumstances which required quarantine measures of any importance.

The total number of steamers and dhows given pratique during the year at the different ports was as follows :—

Stations.	Steamers.			Dhows.		
	1927.	1928.	1929.	1927.	1928.	1929.
Dar-es-Salaam	480	558	602	1,738*	2,290*	884
Tanga	283	357	349	864	674	642
Lindi	62	88	97	154	146	391
Kilwa	33	36	38	145	145	162
Pangani	46	109	99	250	235	228
Bagamoyo	1	2	8	402	685	287
Mikindani	31	54	56	151	151	148
Mafia	33	41	34	202	205	229
Kigoma	155	177	236	24	27	40
Mwanza	71	64	71	90	1,262	106
Bukoba	63	71	97	1	—	2
Musoma	62	65	70	87	187	108
Mwaya (Lake Nyasa)	23	18	15	20	13	17
TOTAL..	1,343	1,640	1,772	4,128	6,020	3,244

* See remarks under Port Health Work on page 63.

V.—MATERNITY AND CHILD WELFARE.

Further substantial progress has been made at the Government clinics, and the number of Health Visitors was increased to 11.

The scope of the work done at Kahama may be observed by reference to page 143.

During 1929 the Government grant to the Church Missionary Society and the African Inland Mission was increased to a total of £1,650.

The two tables (*a*) and (*b*) shown below give, respectively, comparative figures for the five years 1925–1929, and of the work performed at the several clinics during the year under review :—

TABLE (*a*).

	1925.	1926.	1927.	1928.	1929.
Visits paid by Health Visitors—					
To new births and other conditions ..	2,018	3,702	7,354	7,807	12,477
Mothers admitted to clinics—					
In ante-natal state	—	3	57	564	697
For confinement	—	21	507	1,654	2,525
In post-natal state..	—	13	162	992	1,514
For gynæcological and other conditions	—	—	—	—	763
Ante-natal examinations	—	—	1,131	1,019	5,308
Total number of new births	—	—	562	449	488
Total number of confinements, including district	—	—	—	—	2,576
Total number of still-births, premature births, miscarriages, retained placenta, etc. ..	—	—	1,191	2,019	730
Children admitted to clinics	—	36	183	272	416
Total number of new cases, in- and out-patients, seen at clinics—					
Mothers	—	2,506	10,736	16,686	29,259
Children	4,207	4,224	16,515	24,870	39,131
Total number of attendances at clinics—					
Mothers	—	6,164	27,745	74,340	148,511
Children	—	12,924	36,725	90,747	198,152
Special examinations, dentals, slides, vaccinations, etc.	—	2,114	10,071	—	13,257

TABLE (*b*).—WORK DONE BY MISSIONARY AND GOVERNMENT ORGANISATIONS DURING 1929.

—	Bagamoyo.	Berega.*	Buigiri.*	Dar-es-Salaam.	Itaranganya.	Kahama.	Kongwa.*	Bukoba.	Mahenge.	Machame.	Mpwapwa.*	Mvumi.*	Mwanza.	Nzega.	Runzewe.	Shinyanga.*	Tabora.	Tanga.	Totals.
Visits paid by Health Visitors	1,103	225	20	2,422	—	259	105	17	136	524	304	5	345	64	24	—	3,693	3,231	12,477
Mothers admitted to clinics ..	25	9	39	100	138	1,747	32	—	8	89	19	30	17	219	—	2,924	44	59	5,495
In ante-natal state ..	9	—	17	11	—	448	6	—	1	22	6	10	—	75	—	81	2	9	697
For confinement	5	6	10	30	138	1,139	14	—	7	46	7	14	10	120	—	956	17	6	2,525
In post-natal state ..	2	2	8	21	—	73	6	—	—	10	5	3	6	16	—	1,331	5	26	1,514
For gynæcological and other conditions ..	9	1	4	38	—	87	6	—	—	11	1	3	1	8	—	556	20	18	763
Ante-natal examinations ..	60	23	53	283	—	2,187	73	7	2	661	37	5	111	259	3	1,356	71	117	5,308
Total number of new births ..	10	—	5	33	—	70	8	—	—	131	11	—	47	6	1	—	151	15	488
Total number of confinements, including district	5	6	9	30	138	1,139	14	—	7	46	11	10	17	154	—	956	22	12	2,576
Total number of still-births, premature births, miscarriages, retained placenta, etc.	22	3	13	58	—	88	8	—	—	102	2	6	12	14	—	364	10	28	730
Children admitted to clinic	11	—	55	79	—	95	26	—	—	14	12	26	2	8	13	—	44	31	416
Total number of new cases in and out-patients seen at clinics—																			
Mothers	1,414	589	294	4,328	138	4,105	634	32	54	2,499	561	1,582	643	697	570	6,562	1,628	2,929	29,259
Children	1,967	1,750	1,006	4,040	—	2,182	1,728	10	1,001	3,787	795	2,792	950	785	227	7,130	6,279	2,702	39,131
Total number of attendances at clinics—																			
Mothers	6,979	1,672	1,705	12,327	—	9,135	1,318	74	66	3,192	1,952	2,633	2,166	1,414	1,637	91,123	5,400	5,718	148,511
Children	14,296	5,783	4,187	11,771	—	5,544	6,983	17	1,779	4,922	1,786	6,332	4,730	2,241	697	102,163	19,671	5,250	198,152
Special examinations, dentals, slides, vaccinations, etc. ..	485	18	11	1,312	—	513	122	—	—	46	—	—	215	5,833	387	830	3,039	446	13,257

* Missionary.

VI.—HOSPITALS AND DISPENSARIES.

	1927.	1928.	1929.
In-patients	28,808	32,794	34,803
Out-patients	367,762	372,864	361,101
TOTAL	396,570	405,568	395,904

The above figures do not include cases of yaws, syphilis and ankylostomiasis treated in districts, those attended to at the Maternity and Child Welfare Clinics, the returns of small dispensaries in charge of African dispensers, an unknown number seen by the subordinate medical staffs attached to the Public Works Department and railway labour forces in the field.

Total cases, in- and out-patients, treated at Government Hospitals and Dispensaries	395,904
Total cases treated at Government Maternity and Child Welfare Clinics	43,025
Total cases treated at partly subsidised Mission Maternity and Child Welfare Clinics	25,465
Yaws, and syphilis cases treated on tour by Government Staff	12,052
Other cases treated on tour in Districts by Government Staff	57,185
Yaws and syphilis and other cases treated by Missionaries supplied with Government drugs and equipment	15,858
Other cases treated by African Dispensers in independent charge	40,445
TOTAL	589,934

The returns received of the work performed during the year at the tribal dispensaries show a total of 190,545.

TABLE SHOWING THE INFLUENCE OF THE TRIBAL DISPENSARY SYSTEM ON THE IN-PATIENT AND OUT-PATIENT RETURNS FROM HOSPITALS.

Year.	In-patients.	Increase.	Decrease.	Out-patients.	Increase.	Decrease.	No. of Tribal Dispensaries.	Approximate Numbers of Cases Treated by Tribal Dispensers.
1921 ..	6,682	—	—	62,969	—	—	—	—
1922 ..	13,650	6,968	—	103,409	40,440	—	—	—
1923 ..	16,780	3,130	—	114,695	11,286	—	—	—
1924 ..	21,946	5,166	—	169,032	54,337	—	—	—
1925 ..	27,931	5,985	—	244,442	75,410	—	—	—
1926 ..	26,620	—	1,311*	307,635	63,193	—	—	—
1927†	28,808	2,188	—	367,762	60,127	—	90	32,800
1928†	32,798	3,990	—	372,764	5,002	—	147	140,702
1929†	34,803	2,005	—	361,101	—	11,663	247	190,545

* Decrease due to larger numbers of Yaws cases treated as out-patients.
† Tribal Dispensaries were introduced during the third quarter of 1927.

New buildings erected and improvements and repair to existing medical buildings during 1929.—The following summary of work and the expenditure incurred during the year have been supplied through the courtesy of the Director of Public Works :—

	£
TANGA PROVINCE—	
3-roomed Quarters for Medical Officer, Tanga	345
Extension to Native Hospital, Tanga	232
Drainage, European Hospital, Tanga	1,185
Native Hospital and Dispensary, Handeni	600
NORTHERN PROVINCE—	
Reconstruction of Hospital buildings, Arusha	821
Removal and re-erection of Native Hospital, Arusha ..	4,649
Extension to European Hospital, Arusha	9,293*
European Hospital and Nurses' Quarters, Moshi	3,190
Additional Ward, Native Hospital, Moshi	2,143
Increased accommodation, Tuberculosis Camp, Kibongoto	9

* Partly paid out of Rothschild Trustees' Fund.

	£
EASTERN PROVINCE—	
Special repairs to European Hospital, Dar-es-Salaam	1,000
School for Dispensers, Dar-es-Salaam	486
Alteration to Native Hospital, Kilosa	2,050
IRINGA PROVINCE—	
European Hospital and Nurses' Quarters, Iringa	1,230
Repairs to Native Hospital, Tukuyu	600
KIGOMA PROVINCE—	
Repairs to Hospital, Kigoma	522
New Female Ward at Hospital, Kigoma	62
Hospital and Dispensary, Kasulu	472
Quarters for Sub-Assistant Surgeon, Kasulu	348
Quarters for Sub-Assistant Surgeon, Sumbawanga	331
BUKOBA PROVINCE—	
Native Hospital, Bukoba	7,036
Quarters for Sub-Assistant Surgeon, Bukoba	675
MWANZA PROVINCE—	
Native Hospital and Dispensary, Maswa	744
Quarters for Sub-Assistant Surgeon, Shanwa	175
Buildings for Medical Department, Musoma	575
TABORA PROVINCE—	
Quarters for Sister and Health Visitor, Tabora	1,633
Native Hospital, Tabora	897
Improvements and extensions to Maternity and Child Welfare Clinics, Itaranganya	1,064

MENTAL HOSPITALS.

I.—DODOMA MENTAL HOSPITAL.

ANNUAL REPORT FOR YEAR ENDING 31ST DECEMBER, 1929, BY MR. J. SPITTLES, SUPERINTENDENT.

Numbers.—

	Males.	Females.	Total.
In hospital on 1st January, 1929	40	17	57
Admissions since 1st January, 1929	38	10	48
Discharges since 1st January, 1929	18	6	24
Deaths since 1st January, 1929	10	1	11
Remaining on 31st December, 1929	50	20	70

Admissions (48).—These were classified as follows :—

17 suffered from mania.
13 ,, delusional insanity.
7 ,, dementia.
6 ,, imbecility associated with epilepsy.
5 ,, ,, with impulsive insanity.

15 of the above were criminal lunatics.

Discharges (24).—

21 were discharged by the Board of Visitors as recovered.
3 ,, as improved.

2 of the above were subsequently re-admitted.

Deaths (11).—The principal cause of death appeared to be as follows :—

1 female suffered from chronic debility.
2 males ,, ,, ankylostomiasis.
2 ,, ,, ,, acute dementia.
1 male ,, ,, pneumonia and epilepsy.
1 ,, ,, ,, senility with tubercular arthritis.
1 ,, ,, ,, exhaustion following prolonged excitement and restlessness.
1 ,, ,, ,, cerebral hæmorrhage.
1 ,, ,, ,, exhaustion following successive epileptic seizures.
1 ,, ,, ,, dementia and inanition.

Three of the above were criminals; inquests were held in their cases at which verdicts were returned in accordance with the medical evidence.

Health.—The general health has been good.

There has been no epidemic, and, beyond minor injuries due to falls in epileptic seizures, no patient sustained injury throughout the year.

No form of artificial restraint has been employed since this hospital was taken over by the Department.

Seclusion for short periods during the day was resorted to upon ten occasions.

Visitors to the hospital have noted the good terms existing between patients and attendants.

Five epileptics were selected by the Medical Officer for one month's course of treatment by luminal. The results were encouraging and the Medical Officer proposes to prescribe a further course of the drug when supplies are received from home.

Seventy per cent. of the patients have voluntarily employed themselves as follows :—

In agriculture.
,, native industries.
,, cooking.
,, sanitation.
,, carpentry.

The benefit which patients derive from their occupations is considerable. Congenial work seems to help the convalescents towards recovery, and in the cases of chronic patients it seems to provide a measure of happiness and contentment.

The majority of the patients are skilled at rope and string making.

The rope is used at the Mental and Native Hospitals for bedsteads.

A small carpenter's shop has been established at which three patients are being trained ; it is hoped that articles of furniture may be made for the Department in the near future.

Visitors.—The hospital was inspected by the following :—

	Number of Visits.
His Excellency, The Acting Governor	1
The Deputy Chief Secretary	1
The Senior Health Officer	1
The Commissioner of Police	1
The Provincial Commissioner, Central Province, Dodoma ..	9
The Medical Officer	60
The District Officer	7

Nine other officials also visited.

General.—Fresh vegetables were grown, and taken on ration charge, which supplied the hospital for one month. A much larger area has been taken under cultivation, and it is hoped that a larger crop will be gathered in the coming year.

The number of criminal lunatics has steadily increased and the majority cannot be entrusted with tools or allowed occupation in outer grounds.

Thirteen articles of patients' work were shown at the Dar-es-Salaam Exhibition.

Three articles of furniture were made for the Native Hospital, Dodoma.

The police and prison, Dodoma, have very kindly continued the daily supplies of water throughout the year.

Weekly supplies of fresh fruit and a generous supply of young trees were received from the Department of Agriculture.

Sports were held on New Year's Day, for prizes given by the Medical Officer and Matron. A party of dressers from the Native Hospital seemed glad to join in most events with the patients.

Each member of the Board of Visitors has readily given his services in any matter connected with the progress of the hospital and the welfare of the patients. The President, Mr. Hignell, has given young trees from his garden and advice as to planting, with the result that the hospital grounds are markedly improved.

Ample supplies of medical stores have been received from Headquarters.

STATEMENT OF EXPENDITURE FOR NINE MONTHS OF FINANCIAL YEAR ENDING 31ST DECEMBER, 1929.

HEAD XV.—*Medical and Sanitation.*

Sub-Head 59, *" Maintenance of Lunatics and Asylums."*

	Shs.
Authority Departmental Warrant No. 11	5,000/–
,, ,, ,, 187	4,000/–
,, ,, ,, 233	3,000/–
TOTAL	12,000/–
Expended during the period—	Shs.
In foodstuffs	5,115/–
In attendance	3,250/10
In sundries	333/30
TOTAL	8,698/40

The approximate cost per head per month has been Shs. 14/43.

II.—LUTINDI MENTAL HOSPITAL.

Statistics.—

	Males.	Females.	Total.
In residence on the 1st January, 1929.. ..	48	31	79
Admitted during the year 1929	25	5	30
Discharged during the year 1929	5	—	5
Escaped during the year 1929	1	—	1
Deaths during the year 1929	7	5	12
Remaining on the 31st December, 1929 ..	60	31	91
Average daily number resident during the year 1929	56	31	87
Total under treatment during the year 1929	73	36	109

	yrs.	mths.	yrs.	mths.	yrs.	mths.
Average stay of those discharged	1	—	—	—	1	—
,, ,, who died	3	1	4	1	3	6
,, ,, remaining	6	11	10	4	7	7

Admissions.—The number of patients admitted throughout the year was 30. Their mental condition was classified as follows :—

10 suffered from mania in various forms.
4 ,, epilepsy-insanity.
5 ,, dementia.
1 ,, hemiplegia with mental enfeeblement
3 ,, paralysis.
2 ,, melancholy.
2 ,, imbecility.
3 ,, delusional insanity.

Discharges.—The number of patients discharged was five. All patients discharged suffered from mania.

Escaped.—One patient suffering from mania.

Deaths.—Seven males and five females died during the year. The principal causes, so far as could be ascertained, in each case were :—

2 pneumonia.
4 paralysis.
1 debility.
2 extreme old age.
1 heart failure.
1 dysentery.
1 phthisis.

Health.—The health of the patients was good. A mild epidemic of dysentery occurred with one death. There were several cases of influenza.

Occupation of the Patients.—All the inmates who were well enough to do so have been suitably employed. The males in hoeing, planting gardens, cutting firewood and cleaning roads ; the females in cooking, basket and matmaking.

Sanitation.—All rooms occupied by the patients have been whitewashed four times during the year.

Inspections.—The Administrative Officer of the Usambara District paid one visit on 8th July, 1929.

The Medical Officer, Lushoto, paid two visits on 8th July, 1929, and 18th December, 1929.

The A sistant District Officer, Korogwe, paid one visit on 15th September, 1929.

VII.—PRISONS AND ASYLUMS.—REPORT ON THE HEALTH OF PRISONERS FOR 1929.

Name of Prison.	1 Number of prisoners in prison on 31.12.28	2 Number of prisoners committed to prison during 1929	3 Number of prisoners in prison on 31.12.29	4 Daily average number of prisoners, 1929.	5 Number admitted to prison sick bay during 1929.	6 Number admitted to Government hospitals, 1929.	7 Daily average on sick list.	8 Number of deaths of prisoners.	9 (a) Cause of death in each case.	9 (b) Period of detention in prison prior to date of death. Y.	M.	D.	10 (a) Prisoners released on medical grounds.	10 (b) Cause of release in each case.
Arusha ..	96	495	90	103·9	20	—	4·2	Nil	N.a.		N.a.		Nil	N.a.
Bagamoyo ..	9	82	13	11·3	—	8	1·03	Nil	N.a.		N.a.		Nil	N.a.
Biharamulo ..	—	79	12	11·2	—	6	4	1	1. Malaria	—	—	14	Nil	N.a.
Bukoba ..	83	478	63	88·1	60	18	8·2	1	1. Debility	—	2	27	Nil	N.a.
Dar-es-Salaam	207	1,153	215	223·3	253	190	4·3	5	1. Lobar pneumonia ..	—	10	2	Nil	N.a.
									2. Broncho-pneumonia ..	—	—	16		
									3. Senile debility.. ..	2	5	7		
									4. Lobar pneumonia ..	—	1	12		
									5. Broncho-pneumonia ..	1	4	12		
Dodoma ..	121	241	114	133·2	—	101	2·2	3	1. Syncope following self-starvation	1	7	—	Nil	N.a.
									2. Leprosy and gangrene	2	—	20		
									3. Lobar pneumonia and heart failure	—	9	3		
Iringa	45	198	42	38·2	—	2	0·84	Nil	N.a.		N.a.		Nil	N.a.
Kahama ..	12	164	10	17	—	—	1·2	Nil	N.a.		N.a.		Nil	N.a.
Kasulo ..	2	22	5	2·1	—	—	—	Nil	N.a.		N.a.		Nil	N.a.
Kibondo ..	3	25	4	4·5	—	—	0·39	Nil	N.a.		N.a.		Nil	N.a.
Kigoma ..	33	170	33	38·8	—	4	5·9	Nil	N.a.		N.a.		Nil	N.a.
Kilwa ..	24	88	26	29·4	—	2	0·86	2	1. Lobar pneumonia ..	1	—	23	Nil	N.a.
									2. Heart failure	1	2	—		
Kondoa ..	14	151	19	20·5	—	—	0·81	Nil	N.a.		N.a.		Nil	N.a.
Lindi ..	22	279	77	35	—	10	0·50	Nil	N.a.		N.a.		Nil	N.a.
Lushoto ..	20	103	27	24·5	—	—	7·01	Nil	N.a.		N.a.		Nil	N.a.
Mafia ..	18	127	14	20·8	—	4	1·45	1	1. Abscess of the kidney	—	—	7	Nil	N.a.
Mahenge ..	9	35	6	5·1	—	—	0·09	Nil	N.a.		N.a.		Nil	N.a.
Manyoni ..	8	91	9	10	67	—	0·4	Nil	N.a.		N.a.		Nil	N.a.
*Maswa ..	—	154	—	18·1	—	—	—	Nil	N.a.		N.a.		Nil	N.a.
Mbeya ..	11	94	13	12·5	—	1	0·03	Nil	N.a.		N.a.		Nil	N.a.
Mbulu ..	14	170	18	22·3	50	2	0·98	1	1. Lobar pneumonia ..	—	—	21	Nil	N.a.
Mikindani ..	15	107	7	11·6	—	3	0·17	Nil	N.a.		N.a.		Nil	N.a.
Mkalama ..	—	127	11	18	—	—	0·14	Nil	N.a.		N.a.		Nil	N.a.

* Small station—further particulars not available.

Name of Prison.	1 Number of prisoners in prison on 31.12.28	2 Number of prisoners committed to prison during 1929	3 Number of prisoners in prison on 31.12.29	4 Daily average number of prisoners, 1929.	5 Number admitted to prison sick bay during 1929.	6 Number admitted to Government hospitals, 1929.	7 Daily average on sick list.	8 Number of deaths of prisoners.	9 (*a*) Cause of death in each case.	9 (*b*) Period of detention in prison prior to date of death. Y.	M.	D.	10 (*a*) Prisoners released on medical grounds.	10 (*b*) Cause of release in each case.
Morogoro ..	110	368	117	123·3	130	—	10·9	3	1. Diarrhœa and hookworm	—	6	—	Nil	N.a.
									2. Pulmonary tuberculosis	10	11	—		
									3. Double lobar pneumonia	—	—	25		
Moshi ..	81	328	62	47	10	—	6	Nil	N.a.		N.a.		Nil	N.a.
Musoma ..	35	255	37	38	—	1	5·2	Nil	N.a.		N.a.		Nil	N.a.
Mwanza ..	131	301	143	148	37	4	2·8	4	1. Senile decay, acute diarrhœa	—	—	22	Nil	N.a.
									2. Lobar pneumonia ..	—	1	18		
									3. Cirrhosis of the liver and diarrhœa	—	11	14		
									4. Epileptic fits and cellulitis of lower jaw and neck	—	6	17		
*Njombe ..	—	44	—	7·7	—	—	—	Nil	N.a.		N.a.		Nil	N.a.
Nzega ..	23	220	35	28·2	—	—	—	Nil	N.a.		N.a.		Nil	N.a.
Pangani ..	16	76	11	10	1	—	2·65	Nil	N.a.		N.a.		Nil	N.a.
Shinyanga ..	11	133	19	18·6	2	5	0·2	Nil	N.a.		N.a.		Nil	N.a.
Singida ..	—	216	26	22	—	4	0·31	Nil	N.a.		N.a.		Nil	N.a.
Songea ..	10	60	13	9·6	—	—	—	Nil	N.a.		N.a.		Nil	N.a.
Sumbawanga	2	37	11	7·9	—	—	0·2	Nil	N.a.		N.a.		Nil	N.a.
Tabora ..	254	445	257	258·9	101	5	2·35	1	1. ? Rupture of spleen and hæmorrhage	—	5	—	Nil	N.a.
Tanga ..	199	496	187	193·2	368	12	11·22	1	1. Pneumonia	—	7	—	Nil	N.a.
Tukuyu ..	64	183	93	81·2	24	2	8	Nil	N.a.		N.a.		Nil	N.a.
Tunduru ..	2	—	—	0·3	—	—	0·08	Nil	N.a.		N.a.		Nil	N.a.
Utete ..	9	124	10	12·1	3	4	0·17	Nil	N.a.		N.a.		Nil	N.a.

* Small station—further particulars not available.

Name of Prison	11 System of confinement: Association Cells (A.C.), Single Cells (S.C.).	12 Cubic space available at night per prisoner taking average number of prisoners.	13 Floor space in square feet per prisoner taking average number of prisoners.	14 Labour on which prisoners are employed and hours of work.	15 Sanitary condition of prison.	16 Are all cells cemented?	17 Prevailing diseases.	18 Rules as to diet and hours of meals. What variety is provided: green food? meat?
		cu. ft.	sq. ft.					
Arusha	A.C. ..	Approx. 500	Approx. 40	Wood-cutting, mending roads, sanitary work in gaol, water carrying. *Hours:* Week-days, 6.30 a.m. to 4 p.m.; Saturdays, 6.30 a.m. to 12 noon; Sundays, no work. Break of one hour for meal each midday	Excellent ..	Yes ..	Malaria, fever, bronchitis, constipation, tape-worm	According to the Prison Ordinance.
Bagamoyo ..	A.C. ..	2,690	368	Sanitary work of Police lines and Prison. *Hours:* 6.30 a.m. to 12 noon, 1 to 4 p.m.	Good ..	Yes ..	Nil	Three times a day: 6 a.m., 12 noon and 5.30 p.m. (1) Maize, beans, ghee and lemons to native; (2) rice, wheat and potatoes to Indian and Arab; (3) daily meat and fish to long term native prisoners, and three times a week to Indian and Arab prisoners.
Biharamulo ..	A.C. and S.C.	593	558	Wood-cutting, water carrying, keeping the Prison premises clean	Good ..	Yes ..	Nil	As prison scale. Variety difficult to procure. Bananas alternated. Millet, beans, salt; ghee also provided.
Bukoba ..	A.C. and S.C.	550	60	General, basket- and mat-making. *Hours:* 6 a.m. to 12 noon and 1 to 4 p.m.	Good ..	Yes ..	Respiratory and intestinal	As per prison scale.
Dar-es-Salaam..	A.C. and S.C.	712·5	32	Tailoring, carpentry, mat-making and labourers in Dockyard, P.W.D., Railway Stores and M.O.H. *Hours:* 6.30 a.m. to 12 noon, and from 1 to 4 p.m.	Good ..	Yes ..	Malaria, bronchitis and chicken-pox	As provided in accordance with the Prison Dietary Scale. Meals are provided three times daily.
Dodoma ..	A.C. ..	447	28	Road-making, stone quarrying, agriculture, building, carpentry and other general labour	Good ..	Yes ..	Conjunctivitis, bronchitis, helminthiasis, injuries, rheumatism	As per dietary scale laid down in Government Notice No. 171 of 1924. Meals: Noon and 4.30 p.m.

Name of Prison.	11 System of confinement: Association Cells (A.C.), Single Cells (S.C.).	12 Cubic space available at night per prisoner taking average number of prisoners.	13 Floor space in square feet per prisoner taking average number of prisoners.	14 Labour on which prisoners are employed and hours of work.	15 Sanitary condition of prison.	16 Are all cells cemented ?	17 Prevailing diseases.	18 Rules as to diet and hours of meals. What variety is provided : green food? meat ?
		cu. ft.	sq. ft.					
Iringa	A.C. ..	680	40	Cutting wood, repairing roads, gardening, carrying water, general sanitary work and station improvements. The hours of work are 7 a.m. to 12 noon and 1 to 4 p.m.	Good ..	Yes ..	P.U.O., bronchitis and constipation	Prisoners are rationed in accordance with Government Notice No. 171 of 1924. Meal hours are 6 a.m., 12 noon and 5 p.m.
Kahama ..	A.C. ..	677	51·9	Mending roads, wood-cutting and water carrying for the gaol, and sanitary work in and around the gaol. *Hours :* Weekdays, 6.30 a.m. to 12 noon, 1 to 4 p.m. ; Saturdays, 6.30 a.m. to 12 noon ; Sundays, no work	Good ..	No ..	Malaria, constipation, diarrhœa, coughs and colds, bronchitis, wounds and other minor injuries	Meals twice a day : 12 noon and 5 p.m. Maize, maize flour, cassava flour, beans and salt.
Kasulo ..	A.C. ..	1,607	950	Grass cutting, collecting firewood and carrying water for gaol from 8 to 12 noon and 2 to 4 p.m.	Good ..	Yes ..	Nil	Local grains ground into meal, with native vegetables in season.
Kibondo ..	A.C. ..	387·63	39·83	Employed on clearing and grass-cutting and minor repairs to prison, etc. *Hours :* They are employed from 7 a.m. to 12 noon and 2 to 4 p.m.	Satisfactory	Yes ..	Minor ailments like colic, constipation, etc. There was no epidemic amongst prisoners during the year.	The general diet of prisoners is beans, millet flour, cassava flour, etc.
Kigoma ..	A.C. ..	260·35	96	Sanitation, wood-cutting, water carrying, stone breaking, road-making	Good ..	Yes ..	Malaria, ankylostomiasis, minor respiratory diseases, tapeworm.	Standard long and short term diets, 12 noon and 5.15 p.m.
Kilwa ,, ..	A.C. and S.C.	1,100	47	Working on Police buildings, township improvements, wood and water carrying, etc.	Good ..	Yes ..	None in particular	According to Prison Ordinance. Hours of meals, 12 noon and 6 p.m. Local produce.

Name of Prison.	11 System of confinement: Association Cells (A.C.), Single Cells (S.C.).	12 Cubic space available at night per prisoner taking average number of prisoners.	13 Floor space in square feet per prisoner taking average number of prisoners.	14 Labour on which prisoners are employed and hours of work.	15 Sanitary condition of prison.	16 Are all cells cemented ?	17 Prevailing diseases.	18 Rules as to diet and hours of meals. What variety is provided: green food? meat ?
		cu. ft.	sq. ft.					
Kondoa	A.C. and S.C.	714·05	71·4	Work in the prison vegetable and food garden; station Government works. No heavy labour is involved	Good ..	Yes ..	Minor respiratory diseases and constipation	6 a.m., 12 noon and 5 p.m. No meat; green food, variety poor. Only short term prisoners kept. Long term go to Dodoma.
Lindi	A.C. ..	1,680	1,400	Stone breaking, road-making and general work. *Hours :* 7 a.m. to 12 noon, 1 to 4 p.m.	Good ..	Yes ..	Yaws and venereal	6 a.m., porridge; noon, grain, vegetables and ghee. 5 p.m., fish, grain and fruit.
Lushoto ..	A.C. ..	455·28	41·42	Prison garden, wood, water and assisting with the sanitation of township. *Hours :* 7 a.m. to 12 noon, 1 to 4 p.m.	Very good ..	Yes ..	Minor injuries, coughs and colds	12 noon and 5.30 p.m. Diet as per regulations. Green food and potatoes are provided.
Mafia	A.C. and S.C.	823	74	Wood-cutting, mending roads, helping sanitation, water carrying and pumping. *Hours :* Weekdays, 6 a.m. to 12 noon and 1 to 4 p.m.; Saturdays, 6.30 a.m. to 12 noon; Sundays, no work	Good ..	Yes ..	Injuries and ulcers of various kinds	As per Prison Regulations: 2 lb. mealie meal, 5 oz. beans, ½ oz. ghee and ¼ oz. salt per day. Lemons twice a week when available. 12 to 1 p.m. and 4 to 5 in the evening.
Mahenge ..	A.C. and S.C.	640	64	Sanitation, station and town improvements, wood-cutting. *Hours :* Mondays to Fridays, 7 a.m. to 12 noon and 1 to 4 p.m.; Saturdays, 7 a.m. to 12 noon. No work on Sundays and Public Holidays	Satisfactory	Beaten lime and sand	Bronchitis and minor injuries	Meals according to dietary scale, at 12 noon and 5 p.m. Lemons, mangoes and spinach; no meat or fish. (N.B.—No long term prisoners kept.)
Manyoni ..	A.C. ..	348	38·7	Cultivating, etc. *Hours :* 6 a.m. to 12 noon and 2 to 4 p.m.	Good ..	Yes ..	Nil	12 a.m. and 4 p.m. Cassava, maize, beans, spinach, etc.; no meat.
Mbeya	A.C. ..	627	62	General labour. *Hours :* 7 a.m. to 12 noon and 1 to 5 p.m.	Satisfactory	No ..	Pharyngitis, acute bronchitis, minor external injuries, enteritis, etc.	Diet is provided according to the scale laid down for short term prisoners.

Name of Prison.	11 System of confinement: Association Cells (A.C.), Single Cells (S.C.).	12 Cubic space available at night per prisoner taking average number of prisoners.	13 Floor space in square feet per prisoner taking average number of prisoners.	14 Labour on which prisoners are employed and hours of work.	15 Sanitary condition of prison.	16 Are all cells cemented?	17 Prevailing diseases.	18 Rules as to diet and hours of meals. What variety is provided: green food? meat?
		cu. ft.	sq. ft.					
Mbulu	A.C. ..	383	31·45	Cultivation of prison garden, road repair, cutting wood for prison, etc. *Hours:* 7 a.m. to 12 noon and 1 to 4 p.m.	Satisfactory	Yes, but require re-cementing.	Nil	Meals twice a day, 12 noon and 4.30 p.m. Maize, 2 lb.; beans, 5 oz.; salt, ¼ oz.; ghee, ½ oz.; cassava, sweet potatoes and other vegetables when available in the prison garden. 6 oz. of meat daily for long term prisoners.
Mikindani ..	A.C. ..	325	84	Repairing the roads, opening drains, and transporting fuel and water for eight hours	Good ..	Yes ..	Nil	Meals are served at noon and 5.30 p.m., according to the scale. Green vegetables, mangoes and lemons occasionally.
Mkalama ..	A.C. ..	402·6	57·6	Station work, cleaning roads, etc.	Good ..	Yes ..	Malaria, myalgia, constipation, bronchitis, ulcers, wounds	Millet, beans, ghee, salt, lemons. *Hours:* 12 noon and 6 p.m.
Morogoro ..	A.C. and S.C.	350	30	Excavation of sand, lime and stone; wood-cutting, timber sawing, work on prison garden; transporting of sand, lime and stone, masonry, carpentry, tailoring and smith work; cleaning and sanitation of prison and premises. *Hours:* 6.30 a.m. to noon, 1 to 4 p.m. daily; Saturdays, 6.30 to 11.30 a.m.; Sundays, no work	Very good ..	Yes ..	Diarrhœa, digestive troubles, cuts, bruises and bronchitis; some cases of hookworm disease, most of them imported; few cases of tuberculosis; few cases of imported chickenpox and yaws; malaria and coughs	Mealie meal (whole), beans, cassava, millet, whole maize, ghee, salt, onions, fresh meat for all prisoners over six months; wild spinach collected daily, and fruit in season from the Government agricultural garden. Meals: 6 a.m., 12 noon and 5 p.m. daily. Special diets as may be ordered by Medical Officer.
Moshi	A.C. ..	300	30	Clearing ground, fencing, etc. *Hours:* 7 to 11 a.m., 2 to 4 p.m.	Very satisfactory	Yes ..	Malaria, bronchitis, worms, constipation, gonorrhœa	According to the standard dietary scale.
Musoma ..	A.C. ..	700	64	Manual	Good ..	Yes ..	Nil	According to Prison Ordinance.

Name of Prison.	11 System of confinement: Association Cells (A.C.), Single Cells (S.C.).	12 Cubic space available at night per prisoner taking average number of prisoners.	13 Floor space in square feet per prisoner taking average number of prisoners.	14 Labour on which prisoners are employed and hours of work.	15 Sanitary condition of prison.	16 Are all cells cemented?	17 Prevailing diseases.	18 Rules as to diet and hours of meals. What variety is provided: green food? meat?
		cu. ft.	sq. ft.					
Mwanza ..	A.C. and S.C.	320	32	Rigorous and simple *Hours:* 6 a.m. to 12 noon, 1 to 4 p.m.	Good ..	Yes ..	Malaria and helminthic diseases	*Scale A, Long Term:* 6 oz. meat with bones, 18 oz. maize whole, 6 oz. beans, 8 oz. potatoes, ½ oz. ghee and ¼ oz. salt. *Scale B, Short Term:* 2 lb. maize (whole), 5 oz. beans, ½ oz. ghee and ¼ oz. salt.
Nzega	S.C. ..	328	28	Cutting wood and grass, carrying water, etc. *Hours:* 6 a.m. to 12 noon, 1 to 4 p.m.	Good ..	Yes ..	Bronchitis, constipation, myalgia, injuries, etc.	According to Prison Ordinance. 12 noon and 5 p.m.
Pangani ..	A.C. ..	680	65	Employed on road repairs, wood-cutting, sea-wall repairs and other Government works. *Hours:* 7 a.m. to 4 p.m., with an hour's rest, 12 noon to 1 p.m.	Clean ..	Yes ..	Nil	Three meals. Short term prisoners get maize, beans, millet, salt and lemon. Long term prisoners get meat, fish, sugar cane, cassava, beans, maize and millet.
Shinyanga ..	A.C. ..	444	37	Cutting wood, clearing grass, carrying water, making bricks and gardening. *Hours:* Weekdays, 7 a.m. to 12 noon, 1 to 4 p.m.; Saturdays, 7 a.m. to 1 p.m.	Good ..	Yes ..	Bronchitis, malaria and constipation	Twice daily, 12 noon and 5 p.m. Cassava flour, beans, ghee, salt and spinach in lieu of lemons. (Meat to long term prisoners.)
Singida ..	A.C. ..	400	40	Drawing water, cutting wood, etc.	Good ..	Yes ..	Nil	Food at 12 noon and 4 p.m. Millet, potatoes, ghee and beans.
Songea	A.C. ..	133·3	108·4	General: water, roads, firewood. *Hours:* 6.30 a.m. to 12 noon, 1 to 4.30 p.m.	Excellent ..	Yes; require recementing	Intestinal diseases and bronchitis	Scale laid down: 6 a.m., light food; 12 noon, porridge and beans, as well as 5 p.m. No meat, being third class prison.
Sumbawanga ..	A.C. ..	850	94·5	Road work, cultivation and general prison labour (water carrying, wood-cutting, etc.). Mondays to Fridays: 9½ hours daily; Saturdays, 5½ hours; Sundays, no work	Good ..	No ..	Respiratory diseases, local injuries, digestive system diseases and fevers	In accordance with authorised dietary scale.

Name of Prison.	11 System of confinement: Association Cells (A.C.), Single Cells (S.C.).	12 Cubic space available at night per prisoner taking average number of prisoners.	13 Floor space in square feet per prisoner taking average number of prisoners.	14 Labour on which prisoners are employed and hours of work.	15 Sanitary condition of prison.	16 Are all cells cemented?	17 Prevailing diseases.	18 Rules as to diet and hours of meals. What variety is provided: green food? meat?
		cu. ft.	sq. ft.					
Tabora ..	A.C. and S.C.	250	24	Industrial, comprising carpentry, masonry, tailoring, blacksmith, tinsmith, domestic, sanitary, agricultural, water carrying, stone breaking and general labour. *Hours:* 7 a.m. to 4 p.m.	Excellent ..	Yes ..	Malaria, pneumonia, dysentery and diarrhœa	As per dietary scale laid down. Additional as prescribed by the Medical Officer.
Tanga	A.C. and S.C.	329	27	Tailoring, soap-making, lime burning, general repairs, sanitation, station and town improvements. *Hours:* 6.30 a.m. to 12 noon, and 1 to 4.30 p.m. All gangs working over half a mile from the prison take their midday meal with them, which is cooked in the morning	Good ..	Yes ..	Malaria, bronchitis, constipation, myalgia and minor injuries	Three meals per day: 6 a.m., 12 noon and 5.30 p.m. *Natives:* Lemon four times a week and meat, 6 oz. daily. *Europeans:* Vegetables daily, and meat 12 oz., as per Government scale. European and Asiatic prisoners: Three meals per day, served at suitable hours as per scale (Prison Ordinance).
Tukuyu ..	A.C. and S.C.	350	72	Ordinary manual labour ..	Satisfactory	No. ..	No special diseases	(1) *Short term:* 2 lb. mealies, 8 oz. beans, ¼ oz. salt and ghee. (2) *Long term:* ½ lb. meat three times weekly, 3 bananas, 6 oz. beans, ¼ oz. salt; other days: 2 lb. mealies, 6 oz. beans, 6 bananas or potatoes, and ghee. *Meal hours*: 12 noon and 5 p.m.
Tunduru ..	A.C. ..	2,500	160	General station work from 6 a.m. to 12 noon and 2 to 4 p.m.	Satisfactory	No. ..	Bronchitis, wounds, constipation	Two principal meals at 10 a.m. and 5 p.m.: Maize flour porridge, beans, meat, dried fish, etc.
Utete	A.C. ..	570	55	Collecting firewood, carrying water for the prison, cleaning gaol surroundings and police latrines, etc. *Hours:* 7 a.m. to 12 noon and 2 to 4 p.m.	Satisfactory	Yes ..	Malaria, constipation, conjunctivitis, bronchitis, injuries	Twice a day, 12 noon and 6 p.m. Millet, 2 lb. each, and 5 oz. beans.

Name of Prison.	19. Vaccinations.						20. Infectious diseases.			
	Number during 1929.				Number excused vaccination on account of previous smallpox or successful recent vaccination.	Number not protected against smallpox.	Number of cases of			
	Vaccinated.	Successful.	Modified.	Failures.			Chickenpox.	Dysentery.	Influenza.	Others.
Arusha	157	105	—	52	—	—	24	3	—	1 tuberculosis.
Bagamoyo ..	Nil	—	—	—	—	—	—	—	—	—
Biharamulo ..	Nil	—	—	—	—	—	—	—	—	—
Bukoba ..	52	48	—	4	—	—	—	—	—	—
Dar-es-Salaam ..	Nil	—	—	—	—	—	Small outbreak	—	—	—
Dodoma ..	All prisoners are vaccinated on admission unless successfully vaccinated within two years or unless they have had smallpox	—	—	—	—	—	—	—	Mild outbreak	Typhoid fever (treated in hospital).
Iringa	12	—	—	—	—	—	—	—	—	—
	All prisoners are protected against smallpox									
Kahama ..	Nil	—	—	—	—	—	—	—	—	—
Kasulo	Nil	—	—	—	—	—	—	—	—	—
Kibondo ..	Prisoners are not compulsorily vaccinated unless there is an epidemic of smallpox	—	—	—	—	—	—	—	—	—
Kigoma ..	All done	—	—	—	—	—	Small outbreak	—	—	Leprosy.
Kilwa	Nil	—	—	—	—	—	—	—	—	—
Kondoa ..	A number have been vaccinated, but no record has been kept apart from the ordinary registers of vaccination, which do not differentiate prisoners from general population	—	—	—	—	—	—	—	—	—
Lindi	Vaccination on admission ..	—	—	—	—	—	—	1	—	4 leprosy.
Lushoto ..	12	4	6	2	Nil; it was not found practicable in a short term prison to vaccinate all prisoners	30 ap.	—	—	—	—

Name of Prison.	19. Vaccinations.						20. Infectious diseases.			
	Number during 1929.				Number excused vaccination on account of previous smallpox or successful recent vaccination.	Number not protected against smallpox.	Number of cases of			
	Vaccinated.	Successful.	Modified.	Failures.			Chickenpox.	Dysentery.	Influenza.	Others.
Mafia	All found vaccinated on admission	—	—	—	—	—	—	—	—	—
Mahenge ..	Nil	—	—	—	—	—	—	—	—	—
Manyoni ..	Nil	—	—	—	—	—	—	—	—	—
Mbeya	13	9	2	2	2	—	—	—	—	—
Mbulu	Nil	—	—	—	—	—	—	—	—	—
Mikindani ..	Nil	—	—	—	—	—	—	—	—	—
Mkalama ..	Nil	—	—	—	—	—	—	—	—	Syphilis.
Morogoro ..	Nil	—	—	—	—	—	30	—	—	1 tuberculosis, 1 hookworm disease.
Moshi	Nil	—	—	—	—	—	—	—	—	—
Musoma ..	Nil	—	—	—	—	—	—	—	—	—
Mwanza ..	Not known	—	—	—	—	—	—	—	—	—
Nzega	Nil	—	—	—	—	—	—	—	2	—
Pangani ..	1	—	—	—	—	—	—	—	—	—
Shinyanga ..	19	12	7	—	—	—	—	1	—	—
Singida	Nil	—	—	—	—	—	—	—	—	—
Songea ..	Nil	—	—	—	—	—	—	—	—	—
Sumbawanga ..	12	6	4	2	—	—	1	—	—	—
Tabora	Yes	—	—	—	—	—	—	—	—	—
Tanga	Nil	—	—	—	775	—	Small outbreak	2	1	—
Tukuyu ..	Nil	—	—	—	—	—	—	—	—	—
Tunduru ..	Nil	—	—	—	—	—	—	—	—	—
Utete	All vaccinated	—	—	—	—	—	—	—	—	—

Name of Prison	21. Insects and other Pests in Prison.					
	Lice.	Bugs.	Fleas.	*Ornithodorus moubata.*	Rats.	Mice.
Arusha	None	—	—	—	—	—
Bagamoyo ..	None	—	—	—	—	—
Biharamulo ..	No evidence of insects, etc. Inside walls whitewashed and kept clean	—	—	—	—	—
Bukoba	Flies and mosquitoes	—	—	—	—	—
Dar-es-Salaam ..	There is very little trouble from them	—	—	—	—	—
Dodoma ..	Mosquitoes and flies	—	—	—	—	—
Iringa	There is no evidence of insects, lice, etc., being present	—	—	—	—	—
Kahama ..	None	—	—	—	Yes ; rats trapped ..	—
Kasulo	Yes ; ticks have been found. Floors cemented and cracks and crevices in the walls filled in.					
Kibondo ..	As the walls and floors are well cemented and also disinfected periodically, there are no rats or bugs.					
Kigoma	New prisoners bring in lice, bugs, fleas, etc. Cells, persons and clothing are washed daily, and regular white premises is carried out. Heads are kept shaved.					washing and tarring of
Kilwa	None	—	—	—	—	—
Kondoa	None	—	—	—	Rats occur. Traps and barium carbonate used	—
Lindi	Rats, mosquitoes and sand-flies	—	—	—	—	—
Lushoto	None	—	—	—	—	—
Mafia	None	—	—	—	—	—
Mahenge	None	—	—	—	—	—
Manyoni ..	—	—	—	—	Rats ; traps supplied	—

Name of Prison.	21. Insects and other Pests in Prison.					
	Lice.	Bugs.	Fleas.	*Ornithodorus moubata.*	Rats.	Mice.
Mbeya	Nil	—	—	—	—	—
Mbulu	—	—	—	—	A few rats and mice;	these were trapped.
Mikindani ..	Nil	—	—	—	—	—
Mkalama ..	—	—	Yes, during rains ..	—	—	—
Morogoro ..	—	—	—	—	Rats sometimes come in from outside; trapped or poisoned or killed by cat	—
Moshi	—	—	—	—	—	—
Musoma	Mosquitoes only ..	—	—	—	—	—
Mwanza	—	—	—	—	—	—
Nzega	Bugs noticed during A	pril and May. Walls s	crubbed and whitewas	hed; rooms fumigated	; bedding kept in sun.	
Pangani	—	—	—	—	—	—
Shinyanga ..	—	—	—	—	—	—
Singida	—	—	—	—	—	—
Songea	Nothing in Prison ..	—	—	—	—	—
Sumbawanga ..	Nil; new prison completed recently; wards disinfected daily	—	—	—	—	—
Tabora	No	—	—	—	—	—
Tanga	No	—	—	—	—	—
Tukuyu	Ticks	—	—	—	—	—
Tunduru.. ..	Nil	—	—	—	—	—
Utete	Free from all ..	—	—	—	—	—

Name of Prison.	22. Suggestions by the Medical Officer in charge as to improvements required and date when made.			
	(*a*) Accommodation and Ventilation.	(*b*) Diet.	(*c*) Sanitation.	(*d*) Others.
Arusha	Ventilation in 11 wards should be improved	—	—	—
Bagamoyo ..	Nil	—	—	—
Biharamulo ..	Nil	—	—	—
Bukoba	Nil	—	—	—
Dar-es-Salaam ..	Nil	—	—	—
Dodoma	Nil	—	—	—
Iringa	Nil	—	—	—
Kahama	—	—	Latrine partition should be built up to the roof with mud brick or wattle, and daub and floor cemented	—
Kasulo	Nil	—	—	—
Kibondo ..	None	—	—	—
Kigoma	—	—	Minor points of hygiene and sanitation	—
Kilwa	—	—	New latrines	—
Kondoa	—	—	Verbal suggestions on inspection parade only	—
Lindi	None	—	—	—
Lushoto	—	—	—	One of the cells leaks badly; when it rains there is overcrowding of the other cells.
Mafia	Nil	—	—	—
Mahenge ..	None	—	—	—
Manyoni ..	Nil	—	—	—
Mbeya	Nil	—	—	—

Name of Prison.	22. Suggestions by the Medical Officer in charge as to improvements required and date when made.			
	(*a*) Accommodation and Ventilation.	(*b*) Diet.	(*c*) Sanitation.	(*d*) Others.
Mbulu	—	—	Cementing the floor of the cells..	Provision of one more blanket to the prisoners at night.
Mikindani ..	Nil	—	—	—
Mkalama.. ..	Everything satisfactory	Nil	Satisfactory	Nil
Morogoro ..	—	—	—	—
Moshi	—	—	—	—
Musoma	—	—	—	—
Mwanza	Nil	—	—	—
Nzega	Nil	—	—	—
Pangani	Nil	—	—	—
Shinyanga ..	Nil	—	—	—
Singida	—	—	—	—
Songea	(1) There is no proper kitchen in the prison. (2) Suggest a partition wall in the present latrine and thus have a separate one for the use of female prisoners. (3) The iron roofing of No. 3 Ward is very old and leaky, and requires to be renewed	—	—	—
Sumbawanga ..	Nil	—	—	—
Tabora	No suggestions made	—	—	—
Tanga	Nil	—	—	—
Tukuyu	Nil	—	—	—
Tunduru ..	Nil	—	—	—
Utete	Nil	—	—	—

Name of Prison.	23. Action taken by the Prison Authorities as a result of 22.			
	(*a*)	(*b*)	(*c*)	(*d*)
Arusha ..	Suggestion carried out	—	—	—
Bagamoyo ..	—	—	—	—
Biharamulo ..	—	—	—	—
Bukoba	—	—	—	—
Dar-es-Salaam ..	—	—	—	—
Dodoma	—	—	—	—
Iringa	—	—	—	—
Kahama	—	—	Nil	—
Kasulo	—	—	—	—
Kibondo ..	—	—	—	—
Kigoma	—	—	All attended to	—
Kilwa	—	—	New latrine built	—
Kondoa	—	—	Carried out	—
Lindi	—	—	—	—
Lushoto	—	—	—	The matter is in hand.
Mafia	—	—	—	—
Mahenge ..	—	—	—	—
Manyoni ..	—	—	—	—
Mbeya	—	—	—	—
Mbulu	—	—	Nil	Nil
Mikindani ..	—	—	—	—
Mkalama	—	—	—	—
Morogoro ..	—	—	—	—
Moshi	—	—	—	—
Musoma	—	—	—	—
Mwanza	—	—	—	—
Nzega	Nil	—	—	—
Pangani	Nil	—	—	—
Shinyanga ..	—	—	—	—
Singida	—	—	—	—
Songea	—	—	Proper surface drainage has been installed as per suggestion in 1928	—
Sumbawanga ..	N.a.	—	—	—
Tabora	N.a.	—	—	—
Tanga	Nil	—	—	—
Tukuyu	Nil	—	—	—
Tunduru ..	—	—	—	—
Utete	—	—	—	—

Name of Prison.	24 What sanitary arrangements are there in the cells for use at night ?	25 Is drinking water provided for use at night ?	26 Is there a weight register and is it kept up to date ?	27 What number of blankets is provided for each prisoner ?	28 Is the clothing sufficient ?	29 Further remarks and suggestions.
Arusha	Sanitary buckets, etc.	Yes ..	Yes.. ..	One in warm weather, two in cold weather ; waistcoats and one coir sleeping mat are also provided	Yes	Two ventilators in each of 11 cells were placed during the year as a result of a suggestion by Medical Department. Prison roof made completely waterproof by painting the whole throughout the Prison ; all cells were lime-washed three times during the year ; the lower half of the walls were painted with coal tar. All woodwork was given two coats of solignum.
Bagamoyo ..	One latrine bucket per each cell is provided	Yes.. ..	Yes.. ..	One	Yes	Nil
Biharamulo ..	Urine buckets in each cell	Yes, if required	No	Two blankets ; some form of jumpers in colder season would be advisable	Insufficient	New gaol in 1930–31 estimates. Present building most unsatisfactory.
Bukoba	Urinals and bed pans	Yes.. ..	Yes.. ..	Two	Yes	Nil
Dar-es-Salaam ..	Prisoners have access to water-flushed latrines	Yes.. ..	Yes.. ..	One mat and one blanket for healthy prisoners ; one mat and two blankets for sick prisoners	Yes	Nil
Dodoma ..	Pans and urinal pails placed in cells at night	Yes.. ..	Yes.. ..	Two suits per prisoner, sleeping mat and 2 blankets	Yes	Nil
Iringa	Night soil buckets are available in each cell	Yes.. ..	Yes.. ..	Each prisoner is allowed two blankets	Yes	The sanitary conditions obtaining in Prison are in every way satisfactory ; re-roofing has been carried out with benefit, and the buildings generally are in good state of repair. There have been no cases of serious illness during the year.
Kahama ..	Buckets placed in each cell at night and removed in the morning	Yes.. ..	—	One	Yes	Nil
Kasulo	Buckets	Yes.. ..	No ..	One	Yes	Nil
Kibondo ..	Buckets	Yes.. ..	—	The clothing is quite sufficient, and each prisoner is being provided with a blanket at night, together with one mat	—	—
Kigoma	Buckets	Yes.. ..	Yes.. ..	One blanket per prisoner	Yes	Nil

Name of Prison.	24 What sanitary arrangements are there in the cells for use at night ?	25 Is drinking water provided for use at night ?	26 Is there a weight register and is it kept up to date ?	27 What number of blankets is provided for each prisoner ?	28 Is the clothing sufficient ?	29 Further remarks and suggestions.
Kilwa	Sanitary buckets ..	Yes.. ..	Yes.. ..	Two blankets ..	Yes	Nil
Kondoa	Urine buckets ..	Yes.. ..	There is no weight register	One	Yes	Nil
Lindi	Buckets	Yes.. ..	Yes.. ..	One blanket in the hot season and two in the cold	Yes	Nil
Lushoto	Latrine pan in each cell	Yes.. ..	No	Two	Yes	A new weighing machine should be provided ; the present one should be boarded.
Mafia	Sanitary buckets ..	Yes.. ..	—	One blanket and one sleeping mat	Yes	The roof is leaking, and so the cells are damp in the rainy season. There is no kitchen with chimney, and so while cooking the smoke spreads into the cells. Re-roofing of the Prison and reconstruction of the kitchen are suggested
Mahenge.. ..	Pans are provided in each cell at night	Yes.. ..	No ; third class prison	Two, and one mat is also provided	Yes	Nil
Manyoni ..	Latrine pans are provided at night	Yes.. ..	No	Two	Yes	Nil
Mbeya	Buckets	Yes.. ..	No	Two blankets and one mat are provided	Yes	Nil
Mbulu	A latrine pan is always kept in the cells for use at night	Yes.. ..	No weight register is kept by the Prison Authorities	One blanket and one sleeping mat	—	(1) There is no pit-latrine inside the gaol ; the number of latrine pans should be increased. (2) The floor of the cells should have early attention, as it is badly damaged. (3) One more blanket should be provided for use at night. (4) A blanket coat should be provided for every inmate of the Prison. The general health of the inmates was fairly good throughout the year under review. There is no hospital provided inside the Prison, and the urgent cases were treated at the Native Hospital. No improvements of any sort were carried out during the year.
Mikindani ..	One sanitary bucket is provided in each cell	Yes.. ..	No	One	Yes	Nil
Mkalama	Latrine pans are supplied	Yes.. ..	No	One blanket each ..	Sufficient	Nil

Name of Prison.	24 What sanitary arrangements are there in the cells for use at night ?	25 Is drinking water provided for use at night ?	26 Is there a weight register and is it kept up to date ?	27 What number of blankets is provided for each prisoner ?	28 Is the clothing sufficient ?	29 Further remarks and suggestions.
Morogoro ..	Sanitary buckets provided	Yes	Yes	One blanket and a mat ; more when ordered by the Medical Officer	Yes	Nil
Moshi	Buckets	Yes	Yes	Two	Yes	Nil
Musoma	One bucket for urine and one bucket for fæces in each cell	Yes	Yes	One blanket ..	Yes	Nil
Mwanza	Two buckets are placed in each cell	Yes	Yes	One	Yes	Nil
Nzega	Sanitary buckets ..	Yes	No	One blanket and one coir mattress	Yes	Nil
Pangani	Pans	Yes	Yes	One	Yes	Nil
Shinyanga ..	Latrine pans and urine drums are placed at night in the cells	Yes	No	Two blankets and one mattress of coir rope	Yes	Nil
Singida	Buckets	Yes	Yes	Two	Yes	Nil
Songea	Urine drums with lids in the cells at night	Yes	Being a third class prison no long term prisoners are detained, and no weight register is kept	Two blankets and one mat	Yes	Nil
Sumbawanga ..	Sanitary buckets available in all cells	Yes	No	Two blankets each ..	Yes	Nil
Tabora	Buckets	Yes	Yes	One blanket and one mat	Yes	The health of prisoners has been excellent ; no deficiency diseases have been observed.
Tanga	Sanitary buckets in cells	Yes	Yes, weekly and recorded	One blanket and one sleeping mat ; and two blankets for old age prisoners	Yes	Nil
Tukuyu	Buckets	Yes	Yes	Three and sleeping mat	Yes	The alterations to the Prison, whereby the males and females are segregated, and the remands from the convicted are now completed.
Tunduru	A bucket is supplied for night soil and urine	Yes	No	One blanket in hot weather and two in cold	Yes	Nil
Utete	Buckets	Yes	Yes	One blanket and one rope mat	Yes	Nil

VIII.—RAINFALL.

Total Rainfall in Millimetres by Stations, 1929.

Districts.	Stations.	Feet above sea-level.	Rainfall in millimetres.
Central Line Area:			
Dar-es-Salaam	Dar-es-Salaam	S.L.	988·9
Morogoro	Morogoro	1,628	662·4
	Kilosa	1,606	980·7
Dodoma	Dodoma	3,693	575·7
	Manyoni	4,135	611·9
	Singida	5,233	351·5
	Mpwapwa	3,000	439·6
Tabora	Tabora	4,000	635·0
	Kahama	4,055	931·2
	Nzega	—	685·3
Kigoma	Kigoma	2,531	824·8
	Kibondo	4,981	1,157·9
Coastal Area, South:			
Lindi	Lindi	S.L.	573·3
	Tunduru	2,300	978·97
	Masasi	1,505	651·1
	Mikindani	S.L.	1,010·2
Mafia Island	Kilidoni	63	1,371·9
Kilwa	Kilwa	S.L.	496·6
	Liwale	1,500	915·86
	Kibata	1,700	1,414·0
Rufiji	Utete	327	692·7
Coastal Area, North:			
Pangani	Pangani	S.L.	1,001·8
Tanga	Amani	3,004	1,735·9
Northern Hinterland:			
Moshi	Moshi	2,649	648·2
Arusha	Arusha	4,416	835·4
	Mbulu	5,900	569·9
Mwanza	Mwanza	3,709	1,100·6
	Musoma	3,709	612·2
Bukoba	Bukoba	3,709	1,907·7
	Biharamulo	4,350	1,034·0
Usambara	Lushoto	4,579	976·8
Kondoa	Kondoa	4,610	531·5
	Mkalama	4,235	744·8
Southern Hinterland:			
Songea	Songea	3,826	808·4
	Milo	8,300	957·0
Iringa	Iringa	5,365	604·67
	Njombe	—	705·6
Rungwe	Tukuyu	5,069	2,239·1
Mbeya	Mbeya	—	720·0
Ufipa	Sumbawanga	5,100	620·1

IX.—SCIENTIFIC.

Special Reports.

A Report on Human Trypanosomiasis in Tanganyika Territory for the Year ending 31st December, 1929. By Dr. G. Maclean, M.B.E., M.B., Ch.B. (Glas.), D.T.M. (Liv.), Sleeping Sickness Officer.

During the year no extension to other parts of the Territory was observed, nor has any certain evidence of local increase of epidemic proportions been obtained.

Kahama District now forms the chief centre of infection. As compared with the year 1928 the number of new cases in this district has been more than doubled. Next in importance come Tabora and Nzega Districts, where there has been an increase of 75 per cent. over last year's diagnosed cases. This increase in diagnosed cases may not be due to a higher incidence, but perhaps to improved facilities for diagnosis following on an extension of treatment centres and an increasing appreciation by the people of the value of drug treatment.

For the greater part of the year Dr. Corson acted as Sleeping Sickness Officer (*see* Appendix I).

II.—Cases.

The following table shows the new cases and deaths recorded during the year :—

Province—	New cases.	Deaths.
Tabora (excluding Kitunda)	3,012	457
Mwanza	143	53
Kigoma :		
(*a*) Tanganyika Lake Shore	23	4
(*b*) Ufipa (including Nyonga and Urwira)	60	55
Dodoma (excluding Kitunda)	—	—
Kitunda	16	4
Lindi	4	7
Mahenge	4	—
Total	3,262	580

III.—Policy.

The policy of 1928 was followed. There is nothing to add to the observations made in the 1927 and 1928 Reports.

IV.—Symptomatology and Epidemiology.

Observations made during the year by Dr. Edmonds are recorded in Appendix III (not included).

V.—The Situation in the Different Districts.

1. *Maswa and Kwimba Districts.*

No change of note has taken place in these districts during the year. Cases were treated as usual at Maswa Hospital. The burning of trees and stumps in the preceding year's clearing was carried out, and two more clearings were made.

The Clearings.—Both clearings were part of that indicated in the map accompanying last Annual Report. In the one instance, 2½ square miles were cleared north of the Rwaka River, west of Maswa ; and in the other, a few hundred yards were cleared on either side along Kilalo–Kalamera Road (Nassa and Ntussu).

The object of the former one was to release land for agriculture and at the same time clear part of the way to the dry season water-supply on the Baliadi River.

The object of the latter was partly to make the road fly-free and partly to cut off a peninsula of bush, north of the road, from the main forest, in the hope of making it fly-free.

The following is a table of cases diagnosed and deaths reported during the different months :—

Months—	New Cases.	Deaths.
January	2	1
February	2	0
March	0	2
April	2	0
May	1	1
June	2	2
July	5	1
August	1	0
September	2	0
October	0	1
November	0	1
December	1	0
TOTAL	18	9

2. *Musoma District.*

No fresh focus of the disease was reported.

The following table shows the cases diagnosed and deaths reported in the different months :—

Months—	New Cases.	Deaths.
January	7	2
February	10	4
March	9	5
April	8	4
May	11	1
June	6	8
July	18	2
August	8	3
September	17	3
October	9	9
November	10	2
December	12	1
TOTAL	125	44

3. *Kigoma District (Tanganyika Lake Shore).*

An increase of cases was reported during the year. Most of these were from the fishing villages of Kagunga, near the Urundi boundary. The villages of Kagunga were evacuated. The inhabitants dispersed, making new homes with their relatives further east. The estimated population of Kagunga was 250.

The clearing of the Lake Shore between Bangwe and Kigoma Town is not yet completed.

The following table shows the cases diagnosed and the deaths reported during the different months :—

Months—	New Cases.	Deaths.
January	2	1
February	0	0
March	0	0
April	7	0
May	1	1
June	0	0
July	0	1
August	1	0
September	1	0
October	4	0
November	3	0
December	4	1
TOTAL	23	4

4. *Kasulu and Kibondo Districts.*

An agricultural survey was commenced in these districts in November with a view to preparing plans for re-settlement of the people in the event of an outbreak of sleeping sickness.

The surveys are not yet completed. They will be reported on in the next Annual Report.

5. *Ufipa District.*

During the year some re-arrangement of boundaries was made between this district and neighbouring provinces, but as the adjustments are not yet reported as complete, the boundaries, so far as this Report is concerned, will be regarded as unchanged.

The general situation has changed little. During the past two years there has been a slight increase in the incidence of sleeping sickness at Nyonga—possibly because the people have been allowed greater freedom of movement and also because the inhabitants of infected bush villages have been moved into the settlement, late in 1927.

This increase requires investigation, but need not occasion any alarm.

Re-settlement of some of the people of Gongwe chiefdom was carried out during the year. It was at first arranged that all these should join the Urwira settlement, but later about 200 elected to settle at Manga, 100 settled at Urwira, while an unknown number—possibly another 100—scattered into Ukabende in Kigoma District. Attempts are being made to trace these last.

Clearings made during the year were :—At Nyongo, $1\frac{1}{2}$ square miles, and at Urwira $\frac{3}{4}$ square mile.

The Kilamba-Indo fly barrier was reported on by the Agricultural Surveyor in January. This barrier was made in 1927 (see Annual Report, 1927). In 1928 people began to settle in the cleared area. In January, 1929, Mr. Allinson, Agricultural Surveyor, reported that 700 people had settled there with large herds of sheep and goats and a small herd of cattle, and that food crops and sim-sim as a cash crop were doing well. He recommended a widening of the clearing by another 400 yards, and it is proposed to do this in 1930.

Farming.—In Nyongo the greater part of the land cultivated in 1926 was fenced off from the rest in 1928 and allowed to lie fallow during 1929. This was the beginning of the introduction of alternation of cultivation and fallow into the new settlements. The fallow land is used for grazing.

Agriculture.—In 1928 Mr. Allinson set aside a piece of land for experimental agriculture, and on this in 1929 he grew maize, millet, sim-sim, ground-nuts, local beans and fivi beans.

The year was generally a bad one for crops owing to the partial failure of the rains, and both ground-nuts and fivi were a failure, but the other crops, though not so good as would be expected in a normal year, were, as a result of careful tillage, much superior to those of the same varieties grown by the natives.

The natives appeared much interested in the results obtained, and I consider that this type of work should be continued in consultation with the Agricultural Department.

Stock.—Late in 1927 some cattle—one bull and two heifers—were sent from Tabora District to Ilunde. Some time after, all three contracted trypanosomiasis, but all recovered with treatment by tartar emetic. The bull had trypanosomes in the blood again in December, 1929. In 1929 they were removed to Nyonga and grazed on the land lying fallow in the middle of the clearing. During the year two healthy calves were born. One of the Nyonga inhabitants who owns cattle in Tabora District has decided to remove a few of them to Nyonga.

The goats introduced from Shinyanga to Nyonga in 1926 are maintaining their numbers. The next few years, during which it is essential that conservative farming should be insisted on, will be the critical years for these settlements, and every effort must be made to maintain an adequate staff there.

If this is not done most of the observations made over the last five years will be wasted.

Bush Villages.—Several families left Manga without permission and settled at the old evacuated village of Pimbwe. These will be dealt with in 1930 when the harvest is over.

The following table shows the cases diagnosed and deaths reported during the different months :—

Months—	New Cases.	Deaths.
January	13	9
February	4	14
March	4	9
April	4	5
May	3	3
June	7	2
July	2	0
August	6	2
September	4	3
October	6	0
November	1	7
December	6	1
TOTAL	60	55

6. *Tabora District.*

South of the railway the number of cases at the new settlement at Ussoke is diminishing; on the other hand, on the east, where only a small proportion of the population have been re-settled (at Kalula and Morogoro), the disease is on the increase.

A remarkable state of affairs has come to light at the sub-chiefdom of Unyangwira. This country, at one time an important paramountcy, has been declining for years. Its maximum population is unknown, but in 1927 it had dwindled to something like 500 men, women and children, or less. Now it is almost deserted, the people having either died or moved away, the movement being for the most part towards the north and north-west into Ngulu proper. How much of this move is due to sleeping sickness is uncertain, but it is probably as much an end-result as a cause.

The first case reported from Unyangwira was in November, 1928, after a visit from a sleeping sickness scout, since then 16 more have reported for treatment, but as the treatment centre (Sekonge) is anything from 35 to 85 miles away from the villages it is unlikely that more than a small proportion of actual cases have been recorded.

I am indebted to Mr. Collett of the Agricultural Department for recent information about this area.

At Kipili, further east, sporadic cases have been found by scouts right up to the border of Manyoni. Surveys by the same scouts have failed to reveal any cases in the settlements on the railway, east of Tabora.

Fishing.—At Sekonge arrangements have been made for the medical examination of the local fishermen. It has been found that these fishermen work in gangs, each gang being under the control of a master-fisherman. These master-fishermen have now been made responsible for the health of their followers, whom they bring regularly for medical inspection, and also send for treatment when necessary.

There is reason to believe that fishing places are important foci of infection. A good deal of marketing as well as fishing is done at these places, and in order to get some control of the whole industry a system of registered markets is under consideration.

Settlements.—It will be recalled that the settlement at Morogoro consisted of people from the neighbouring chiefdom of Ugunda. These were at the time given an undertaking that they would be allowed to return to their own chiefdom after a few years if they wished to. This permission has now been given them. A few elected to remain at Morogoro. Most of the remainder have been absorbed into the larger of the Ugunda settlements, principally at Kalula.

Clearings.—A small clearing was made at Kakola, Ussoke, to allow for expansion of the settlement.

North of the Railway.—It is convenient to take the chiefdoms separately.

In Eastern Unyanyembe (including Ushisha, Usagusi, Ugalla, Kaliuwa and Mpanda) a few cases have been found. The chief sources of infection are believed to be the fishing places on the Ngombe River. The country, excepting the rainy season swamp to the west, is for the most part bush.

About 64 families from Usagusi have expressed a wish to move into the Kaliuwa clearing. This move will probably be completed next year.

Apart from this no settlement is taking place here at present.

In Usagari the people, consisting of about 450 families, have been concentrated at an old clearing at Kapumbuli, where a large proportion of the population were already settled.

The few cases that occur are treated at Isela (Urambo).

In Urambo the political situation has been very unsatisfactory for a long time, after two years of work re-settlement is not yet completed. Three settlements have been formed. One is in the north in Ukumbi and consists of about 600 families. Another consists of a straggling line of settlements, most of them old, occupied by about 210 families just north of the Ngombe River. The third is at Isela, the chieftainess' head-quarters, into which 21 families have moved.

What remains of the population north of the Urambo–Tabora road is settled at these places. The area south of the above road, which, with the exception of parts of Isela, is nearly all bush, has not been touched.

Dr. Edmond, writing about this chiefdom, states : " Only the immediately urgent resettlement was done. Indeed in great part, by deaths or desertion the question had solved itself."

The people are treated at Isela and Mambali (Nzega).

Uyowa, excluding the sub-chiefdom of Ubagwe, has contributed a few cases only, and these are being treated in Urambo. The situation in central Uyowa is not yet clear.

The people of Ubagwe, where the incidence has been fairly high, were concentrated within their own country on the Kahama border, where the new settlement forms one clearing with the new Ulewe settlement in Kahama, the Ubagwe portion consists of about 250 families. Cases are treated at Nzindalo (Kahama).

Ushetu, before settlement, consisted of a few large settlements, some of which had cattle, and a large number of small bush villages. In the latter the incidence of the disease has been fairly high during the last eighteen months.

The plans made for the re-settlement of the chiefdom have only been partially carried out and the work is still in progress. It will be reported on next year.

Cases are treated at Nzindalo.

Uyuwi borders on the open country north of Tabora, but is itself largely bush. A number of infected cases are known to have moved in here, and the gunguli of Umanda on the west is known to be infected. The eastern part of the chiefdom has not yet been surveyed.

The following table gives a list of new cases diagnosed and cases reported in the different months :—

Months—	New Cases.	Deaths.
January	36	3
February	74	16
March	69	14
April	53	17
May	40	9
June	55	4
July	69	22
August	44	4
September	57	5
October	97	27
November	112	17
December	63	17
TOTAL	769	155

7. *Nzega District.*

With the exception of a few sporadic cases, sleeping sickness in this district has been confined to two sub-chiefdoms—Unyambewa and Ibanda. These two are under the same paramount, and it was hoped to concentrate them in one place. Unfortunately this was not agreed to by the people, and two settlements were made, one at Mambali (mentioned as a site in last year's Report) for Unyambewa, and one at Shilago for Ibanda. Sixty families were moved into the former, which was already a fairly large settlement (actual figures not available) ; and 330 families into the latter, which, previously, had a settlement of 50 families.

About 100 acres (partly done in 1928) have been cleared at Mambali, and about 500 acres at Shilago. The water supply at Shilago is somewhat precarious and the settlement will have to be carefully watched.

In Unyambewa one gunguli, Ulikampuli, consisting of about 48 families, was, for certain political reasons, left untouched. This gunguli is infected. The population of these two sub-chiefdoms has decreased, as a result of deaths and desertions, by several hundreds since late 1927.

With the exception of Western Makarundi, which is largely (though not completely) open country, Ulikampuli, and a few small villages of Western Karitu, all the Nzega forest population west of the Mwanza Railway is now concentrated.

The following table shows the cases diagnosed and deaths reported during the different months :—

Months—	New Cases.	Deaths.
January	9	1
February	11	6
March	11	0
April	7	5
May	9	4
June	17	2
July	13	1
August	7	2
September	9	5
October	16	1
November	5	0
December	8	4
TOTAL	122	31

8. *Kahama District.*

(*a*) The incidence of reported cases in this district remains high. During the earlier part of the year it appeared to be highest in Bugomba and Mbogwe. Later, most cases were reported from the south-east part of the district, viz., Uyogo and Ukamba.

No medical survey was made of the country to the east of Kahama town, but, so far as is known, the disease has not spread in that direction to any extent. There is also, so far, no evidence of its spread to Diobahika, where flies were seen to be very numerous in June. There was one case from there, a woman, diagnosed at Ushirombo Hospital, but she gave a history of having been away from home for several months before infection.

There is no evidence of spread into the neighbouring district of Biharamulo, but the Agricultural Surveyor, Mr. Hully, obtained information of infection of villages in Mwanza District adjoining the chiefdom of Mbogwe.

(*b*) *Treatment Centres.*—At the end of the previous year there were six treatment centres in existence, viz., the maternity and child welfare clinics at Runzewe, Uyogo, Italanganya, and Kahama (with Kahama Hospital) and camps opened primarily for sleeping sickness at Masumbwe and Ushirombo. By the end of the year seven more centres were opened at Bukombe, Mlole, Mpunze, Nzindalo, Ungoni, Bugomba and Kasilu.

The existing centres at Masumbwe, Uyogo and Italanganya have been enlarged to accommodate more patients. The Runzewe centre was closed.

(*c*) *Re-settlement of the Population.*—It is estimated that 5,486 men, women and children were moved, 2,898 huts built, and 7,245 acres cleared. Besides enlarging the four settlements mentioned in the last Annual Report, viz., Western Ngogwa, Masumbwe,

Bukombe, and Ushirombo, four other settlements were made at Bugomba, Ungoni, Ulewe I and Nzindalo. In a number of the chiefdoms there are large areas that have not been evacuated, and to make the situation clear it is necessary to describe what has been done in each chiefdom separately.

In Usumbwa the work of re-settlement was only partially successful. As was pointed out early in the year, there was in this chiefdom a large " floating " population who made temporary settlements in Kahama, Biharamulo, and Kibondo, spending a few years first in one district and then in another. The vast majority of these (their number is not known) appear to have moved out of Kahama District rather than be concentrated. There were probably others with more permanent homes who followed their example.

In the north, the gungulis of Masambi, with a population of 2,786, Kumsanda with 1,991, Nabagana with 1,166, Ikuzi with 1,195, Nambiro with 1,124 and Diobahika with 706 were purposely left unconcentrated.

With the exception of Diobahika, where there are hardly any large settlements now, all these gungulis still possess fairly large tracts of open, or semi-open, country, which, however, as a result of dispersion of the population, are gradually reverting to bush. The areas of these semi-open patches vary from about $1\frac{1}{4}$ square miles in Masambi to about 20 square miles in Kasilu (or 30 square miles if the adjacent country in Biharamulo is included). Around these areas are placed, at varying distances, small bush villages.

A number of the people from Kondebona who were originally intended to move into Ushirombo were allowed to settle in the gungulis of Masambi and Kasilu.

With these exceptions the population of Usumbwa were settled at Ushirombo, Southern Bukombe, and Ulewe. The people are treated at Kasilu, Ushirombo, and Nzindalo.

Ngogwa chiefdom had only one gunguli moved. This was Idahina, with a population of 127, who joined the Masumbwe settlement. This leaves the occupied parts of Ngogwa now as consisting of a long narrow stretch of almost open country extending north and south, with a few new settlements tacked on to it on the west and south-west, the forest concentration of Masumbwe, and some semi-open country surrounded by a crop of bush villages at Italanganya.

The population of Ngogwa is estimated at 7,000. The population of the remaining bush villages is not yet even approximately known. The people of the Masumbwe settlement are treated on the spot, the remainder are treated at Kahama and Italanganya.

In Mbogwe Chiefdom about 500 people were removed from the western and north-western side into the northern part of Bukombe, while about 60 from the south were settled at Makorongo, near Masumbwe settlement. A few went across the border into Mwanza. Those living in the centre and the east, about 5,000 in all, were not disturbed. Some of these live in large clearings several square miles in extent, and a few of them keep cattle. There are also numerous bush villages where a separate census has not yet been taken.

The people are treated at Mlole, Italanganya, Bukombe, and Masumbwe.

In Bulungwa the sub-chiefdom of Mpunze was not disturbed. Mpunze consists mainly of two large semi-open tracts of country separated by a strip of waterless forest about 6 miles in width. The more westerly of these tracts has about 4 square miles of fairly open country, interspersed with strips of bush. The area of the tracts to the east is more difficult to estimate. It has been so encroached upon by bush that it now largely consists of a number of irregular, more or less separate clearings, in many cases distinguishable from the real bush villages only by the fact that the surrounding scrub is of recent growth.

As elsewhere, these tracts have their attendant bush villages. The remainder of Bulungwa consists of two gungulis, Shelezo and Shaka. The former is largely open country and was hardly disturbed. The people of Shaka, about 763 in number, were moved to a clearing on the western side of Shelezo on the Bulungwa–Ulewe Road. These two gungulis now form the Nzindalo settlement.

The people are treated at Nzindalo and Mpunze.

The people of Ungoni, about 1,000 in number, are concentrated near their chief village. They are treated locally.

The people of Bugomba, also about 1,000 in number, are concentrated near their main village. They are treated locally. Neither Ungoni nor Bugomba is large enough to make

a satisfactory settlement. They were agreed to out of deference to the wishes of the natives.

The chiefdom of Uyogo, though it produces a fair number of cases and has a treatment centre, has had practically no re-settlement done. It is proposed to do this in 1930.

The chiefdoms in the west, Msalala, Busangi, Kahama and Ukamba, all produce cases, but no work has been undertaken in them yet.

Accurate figures for the areas of the individual settlements and of their populations are not yet available.

Road Clearing.—Following a visit to Kahama by the Director of Medical and Sanitary Services, an attempt was made to reduce the prevalence of tsetse on the main roads. At selected places along five main roads the bush was cleared to a depth of about a quarter of a mile on either side of the roads. At Mkweni, one of the worst infested places on the Kahama–Bukoba Road, the good effect was noticed at once.

Observations will be made at the various places cleared during the coming year.

The following table gives a list of new cases diagnosed and deaths reported during the year :—

Months—	New Cases.	Deaths.
January	147	18
February	132	23
March	148	14
April	153	20
May	141	12
June	126	13
July	151	21
August	118	13
September	409	36
October	217	23
November	216	42
December	163	36
TOTAL	2,121	271

9. *Manyoni District.*

A re-arrangement of boundaries is being carried out in this district, but for the purposes of this Report they will be regarded as unchanged. All the reported cases, 16 in all, came from Kitunda (Kiwere) in the south-west.

10. *Kilwa District.*

Treatment was carried out at Likuliro as in former years.

The following is a table of new cases diagnosed and deaths reported during the year :—

Months—	New Cases.	Deaths.
January	0	0
February	0	0
March	0	0
April	0	1
May	1	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	3
November	3	2
December	0	1
TOTAL	4	7

11. *Songea District.*

Four cases were reported during the year. Of these, one is considered to have been infected in Portuguese Territory, while the other three appear to have been infected at Mitomoni (Map G.4 P4B).

The Medical Officer, Dr. Mackenzie, finds (in November) that the limits of the fly belt correspond fairly closely with those described by Dr. Beck eighteen years ago. The only species met with was *G. morsitans*.

APPENDIX.

STAFF.

1. Staff at the end of the year :—

A.—*Full-time Officers.*

Officer.	Station.	Remarks.
Sleeping Sickness Officer—		
Maclean, G.	Tabora	Returned from leave 8.12.29.
Medical Officers—		
Edmond, J. J. B.	Tabora and Southern Kahama Districts	—
Langan, T.	Italanganya, Kahama	Commenced 7.8.29 at Tabora. Transferred to Italanganya 4.12.29. Left Sub-Dept. 31.12.29.
Adams, F. V.	Ushirombo, Kahama	Commenced 18.5.29 at Tabora. Transferred to Ushirombo 24.7.29.
Agricultural Surveyors—		
Macquarie, C.	Tabora	On leave 6.4.29 to 24.12.29.
White, F. W.	Maswa	Transferred from Tabora to Maswa in February.
Hully, E. E.	Kahama	Partly employed in Kibondo.
Allinson, E. H.	Tabora	Transferred from Ufipa to Kahama in October, and to Tabora in November.
Sub-Assistant Surgeon—		
Dave, J. K.	Tabora	Commenced 19.2.29 at Kahama. Transferred to Tabora 4.5.29.
Tulpule, S. B.	Ikoma	Commenced 17.9.29.
Compounders—		
Bhingarde, Y. N.	Liwale	Commenced 29.8.29.
Dispensers—		
2	Tabora	—
1	Nzega	—
3	Kahama	—
1	Ikoma	—
5	Ufipa and Kitunda	—
African Clerks—		
2	Tabora	One in course of handing over.
Dressers and Scouts—		
6	Tabora	—
1	Nzega	—
14	Kahama	—
2	Ikoma	—
5	Maswa	—
8	Ufipa	—
2	Kigoma	—

B.—*Part-time Officers.*

In Kahama	Dr. Lester, Miss Kemsley, Miss Kemp, and three Sub-Assistant Surgeons.
In Tabora District	Dr. Keevill, at Sekonge Mission.
In Kigoma District	Dr. Steel and staff.

2. Full-time Officers who left during the year :—

Officer.	Last Station.	Remarks.
Acting Sleeping Sickness Officer—		
Dr. Corson, J. F.	Tabora	Transferred to special duty December.
Medical Officers—		
Coghlan, B. A.	Liwale	Leave 8.3.29.
Fairbairn, H.	Ikoma	Leave 9.9.29.
MacQuillan, C. J.	Maswa	Leave 27.8.29.
Theis, S.	Ufipa	Leave 13.11.29.
Wilson, D. E.	Kahama	Transferred to Laboratory, Dar-es-Salaam, 25.11.29.
Agricultural Surveyors—		
Harger, R.	Kahama	Employed from 17.4.29.
Sub-Assistant Surgeons—		
Panvalker, M. G.	Tabora	Leave 5.5.29.
Khot, G. K.	Ikoma	Leave 17.9.29.
Compounders—		
Nand Singh	Kahama	Employed from 11.2.29 to 4.4.29.
Correa, A. A.	Kahama	Employed from 19.2.29 to 12.5.29.
Vaz	Liwale	Leave 29.8.29.

EXTRACT OF TUBERCULOSIS REPORT SUBMITTED BY DR. H. N. DAVIES, M.B., CH.B. (Edin.), D.T.M. (Liv.), MEDICAL OFFICER, KIBONGOTO, ON CASES TREATED AT KIBONGOTO AND USANGI HOSPITALS IN THE MOSHI AND NORTH PARE DISTRICTS.

MOSHI DISTRICT.

Kibongoto Hospital.

There were 77 cases of tuberculosis admitted during 1929 :—

Pulmonary	55
Spinal tuberculosis	3
Bones and joints	9
Lymphatic	10
TOTAL	77

All the pulmonary cases were sputum positive ; 28 were brought into hospital by the Compounder as a result of touring in the district. Others came of their own accord.

Of the 55 pulmonary cases :—

Died in hospital	6
Discharged improved	31
Remained	18

District Visiting.—Three hundred and four cases, including the 28 mentioned above, admitted as in-patients, were seen during the bi-weekly visits to Old Moshi, Mbokoni and Machame, by the Indian Compounder in charge of the Travelling Dispensary.

Pulmonary	261

All were sputum positive ; 44 were new cases ; 217 were old cases being treated as out-patients.

Spinal disease	7

Of these five were new cases.

Lymphatic	36

All new cases.

NORTH PARE.

Usangi Hospital.

In-patients.—Two visits were made by the Medical Officer who acted for Dr. Davies during his absence on leave. As the result of Dispenser Mathews' excellent work 27 cases were admitted :—

Pulmonary	12
Spinal	4
Bones and joints	1
Lymphatic	10

The pulmonary cases were diagnosed as sputum positive from slides sent to the Medical Officer at Kibongoto.

Pulmonary cases—

Died	2
Discharged improved	10

Out-patients.

Tuberculosis—

Pulmonary, all positive	18
Spinal	4
Lymphatic	39
TOTAL	61

The total new cases attended to either as in-patients or out-patients at the hospitals or on tour are as follows :—

Kibongoto Hospital—	
In-patients	77
Seen on tour	85
Usangi Hospital—	
In-patients	27
Out-patients	61
TOTAL NEW CASES	250

No diagnosis of pulmonary tuberculosis was made unless the sputum was positive.

Besides the treatment of tuberculosis both these hospitals served a useful purpose in the relief of other affections as shown in the following table :—

	Kibongoto.	Seen on tour.	Usangi.	Total.
In-patients	562	—	248	810
Out-patients	3,585	22,813	8,312	34,710
TOTALS	4,147	22,813	8,560	35,520

The chief conditions met with were malaria, helminthic invasions, yaws, chest complaints, conjunctivitis and ulcers.

ANNUAL REPORT OF KAHAMA DISTRICT CLINICS, WELFARE CENTRES AND SUBSIDIARY HOSPITALS.

By Dr. A. R. Lester, M.B., B.S. (Bom.), F.R.F.P. & S. (Glas.), D.P.H. (Edin.), D.T.M. & H. (Edin.), Medical Officer in Charge.

Index.

The programme of work for our clinics, welfare centres and auxiliary hospitals has had to be considerably modified in this year for the reason foreshadowed in our Report of 1928—the epidemic of sleeping sickness in the district, and the measures considered necessary and taken to circumscribe it.

In pursuance of these measures, there has been necessarily a considerable movement of people from their old homes to the locations chosen for them, which has resulted in the closure of our clinic and the Native Authority hospital at Runzewe. Our welfare centre at Uyogo, which has been treating large numbers of sleeping sickness patients for some time, was handed over to those in charge of sleeping sickness towards the end of the year.

We have now two clinics at Kahama and Itaranganya respectively, and one native general hospital at the former place. The clinic at Kahama is concerned almost entirely with obstetric and gynæcological work and the diseases of children. The local native general hospital takes all other cases. The clinic at Itaranganya, while specially for women and children, also takes on general hospital work.

Meanwhile the sleeping sickness staff in those places they have taken over from us, and in several new treatment centres they have opened, supply us with information in regard to cases of all diseases treated by them.

Their figures are incorporated in ours, though a special and separate report on sleeping sickness is also submitted.

Staff.

The European staff of the district clinics consisted for the greater part of the year of a medical officer and two nursing sisters.

Four Indian Sub-Assistant Surgeons comprised the Asiatic staff.

Among the native staff we have had for varying periods four Native Dispensers and four African District Sanitary Inspectors.

A table of European and Asiatic staff is appended.

Table of Staff—Kahama Clinics and Welfare Centres, 1929.

Name.	Designation.	Station.	Arrived.	Left.	Remarks.
European Staff.					
Dr. A. R. Lester	Medical Officer	Kahama	17.6.27	—	—
Dr. C. Wilcocks	,, ,,	Runzewe	21.8.28	22.2.29	Transferred to Moshi on health grounds.
Dr. F. G. Wilcocks	,, ,,	,,	,,	,,	,, ,,
Miss B. G. Allardes	Sister and Health Visitor	Kahama	11.3.28	8.11.29	Proceeded on vacation leave.
Miss E. L. Kemsley	Senior Nursing Sister	Itaranganya	11.4.29	—	—
Miss C. Kemp	Sister and Health Visitor	Kahama	25.10.29	—	—

TABLE OF STAFF—KAHAMA CLINICS AND WELFARE CENTRES, 1929—*continued.*

Name.	Designation.	Station.	Arrived.	Left.	Remarks.
Asiatic Staff.					
Mr. Harcharan Singh	Sub-Assistant Surgeon	Runzewe ..	15.1.26	12.8.29	Proceeded on vacation leave.
Mr. N. C. Daniel ..	,, ,,	Kahama ..	12.10.27	—	—
Mr. Jagat Singh ..	,, ,,	Itaranganya	29.9.27	29.7.29	Proceeded on vacation leave.
Mr. Basant Singh ..	,, ,,	Uyogo ..	26.5.26	27.12.27	Transferred to Tabora.
Mr. R. H. Doshi ..	,, ,,	Itaranganya	23.2.28	28.10.29	Transferred to Iringa on health grounds.
Mr. Harbel Singh ..	,, ,,	Kahama ..	19.8.29	—	—
Mr. N. B. Tote ..	,, ,,	Itaranganya	16.9.29	—	—
Mr. H. S. Paranjpe ..	,, ,,	Kahama ..	26.12.29	—	—
Mr. B. N. Dikshit ..	,, ,,	Runzewe ..	5.8.29	8.9.29	Transferred to Mwanza.
Mr. Amar Singh ..	Clerk	Kahama ..	14.6.28	—	—

Training of Staff.—Native Dispensers and African District Sanitary Inspectors on arrival in Kahama have been given a week's revision, and local conditions explained to them before being posted in the district. Four tribal dressers have been trained for work in the district.

Several native nurses have been trained in general nursing and the routine of a lying-in hospital, and exceptional opportunities have been afforded in this year for training in midwifery. All the ayahs have seen normal and abnormal deliveries, and most of them are capable of conducting a normal case. Ante-natal examinations they are still hazy about, seeming to lack a sense of touch or its interpretation. Theory has not been neglected in this connection, but few appear to grasp it, even with demonstrations on a model. A nebulous idea, however, roughly correct, has been retained by some in regard to the anatomical arrangements. With the after-care of mother and child they are now well acquainted. The training of the ayahs has been in the capable hands of Sister and Health Visitor Miss B. G. Allardes.

FINANCIAL.

The expenditure of the clinics and welfare centres in the district, to the end of the year, has been as shown in the following table :—

TABLE OF EXPENDITURE, 1929.

Stations.	Pay of Sub-Assistant Surgeons.	Pay of Asiatic Clerk.	Pay of Native Dispensers.	Pay of African District Sanitary Inspectors.	Pay of Motor Drivers.	Pay of Ayahs.	Pay of Sanitary Labourers.
	Shs.	Shs.	Shs.	Shs.	Shs.	Shs.	Shs.
Kahama	5,626/43	1,850/–	560/–	106/45	889/16	2,030/41	396/–
Itaranganya ..	5,130/66	—	1,058/27	660/–	—	1,651/76	—
Uyogo	5,663/93	—	807/74	800/–	—	636/80	—
Runzewe	3,650/97	—	152/–	450/–	—	570/–	—
TOTALS ..	20,071/99	1,850/–	2,578/01	2,016/45	889/16	4,888/97	396/–

TABLE OF EXPENDITURE, 1929—*continued.*

Stations.	Maternity and Child Welfare and Wages of Native Clerk.	Transport.	Transport Allowance.	Upkeep and Running Cost of Motor Vehicles.	Pauper Burials.	V.D. and Yaws.
	Shs.	Shs.	Shs.	Shs.	Shs.	Shs.
Kahama ..	3,641/57					
Itaranganya ..	852/45	4,984/92	5,967/51	2,417/24	78/–	200/–
Uyogo	180/97					
Runzewe ..	261/68					
TOTALS ..	4,936/67	4,984/92	5,967/51	2,417/24	78/–	200/–

VITAL STATISTICS.

The procedure in relation to the collection of these will bear repetition in this report. Its fallibility requires no emphasis, but in the circumstances it has been considered the best method hitherto. Suggestions for its improvement will be referred to presently.

Census.—The enumeration of the people according to sex and two principal age groups—those under and over a year is undertaken annually.

The native chiefs of the district, of whom there are eleven, with a few of the sub-chiefs, are called to a meeting in Kahama by the Administrative Officer. Only one of these is able to understand and read and write the *lingua franca* of the territory—Kiswahili. The remainder speak their own dialects and are made to understand the subject of discussion through an interpreter. None shows any marked astuteness, and all are willing to agree to the proposals in principle, reserving mentally to themselves the right to interpret these as seems expedient. The counting of the people may have its uses to the Government, especially, they consider, in the matter of tax, but though done only once in the year it has its inconveniences and disadvantages. None is enthusiastic in the spirit. This in general is the atmosphere of the meeting.

The Administrative Officer explains the purpose of the convention, expatiates on the methods to be adopted, asks opinions and endeavours to dispel doubts. A date is fixed on for the census. The intention is to obtain a count of the people in the district on a particular day. In practice, two or three days may be taken in some parts, dependent on the weather and the energy of the enumerator.

The chiefs disperse to their homes and call in the headmen of their sultanates, the wanangwa. To these they explain the position and requirements. Every soul under each mwanangwa has to be counted on a certain date. Coloured strings, representing sex and age groups—four colours only to avoid confusion—are distributed. Each colour represents a particular sex and age group, and these are the same for the whole district. The enumeration is effected by knots in the string of appropriate colour—one knot per person. The four strings of each mwanangwa are collected, tied and labelled by the clerk of the chief, as soon after the census as possible. When all have been delivered to the chief's clerk, they are sent to us and the counting and checking of knots and the tabulation on paper of the results is undertaken.

This then is the method of census-taking which has obtained for the last two years, and this in the absence of a literate subordinate executive, is the best that has been possible hitherto.

Results are therefore approximate. The system cannot be imagined to have even the advantage of a constancy in error, left ultimately to the vagaries of a prejudiced, unsupervised, illiterate and unenthusiastic collector as it is. But this has to be tolerated at present. To a man who cannot reckon higher than the number of fingers on his hands, who is apt to confuse colours in strings and the purpose of each, who is clumsy at tying

knots, who is absent-minded and inattentive at his work, and further distracted by being drawn into conversation with friends and acquaintances during it, who is incapable of organising a procession of his people in single file according to sex or age, who dimly comprehends the object in view and misinterprets it at will, who has little or no interest in the proceedings, who is unsupervised, but who, mindful of instructions, is determined to supply the material required in however defective a form, to a man, in short, with all these handicaps in knowledge and inclination, the work is distasteful. The results are, moreover, inaccurate. No legal compulsion attends the taking of the census, and the minimum of inconvenience to the people is the aim.

Why, it may be asked, proceed with a system so obviously fallible ? The reply is not so conclusive as explanatory. Its fallibility and fallacies are known, and due allowance made. Without an expensive executive the method cannot at the moment be improved upon. This method costs nothing and its value is at present slightly higher in proportion to the cost. It is a good preliminary training for the native and its objections will be slowly countered. The native is averse to hurry and is confused by it. Familiarity with a proceeding that is to become an annual one will accustom him to requirements, and instructions will become more explicit. An element of competition as between sultanates may be introduced with advantage, if the possibility of response to the spirit is gauged to be productive.

As a check to the figures obtained by this method of a general census, in three special areas with well-defined boundaries, a nominal roll of inhabitants is taken each year by a census clerk. There are, of course, difficulties in this. The period of the census of these areas is spread over a fortnight or a month, and for purposes of comparison with previous years it has been found in this, the second attempt, to be useless, except in providing numbers, for the reasons that the native may have three or four legitimate names and forgets or hides the one last given. To avoid this error in future all names under which an individual is known are to be taken, and the mwanangwa will under instruction be present to verify these.

Births and deaths, immigration and emigration figures are supplied monthly by all sultanates. These figures are still not as reliable as they might be, but this is only the second year since the regulation as to registration and notification has been in force, and in the absence of a larger and better-organised executive, the onus of reporting these domestic occurrences rests in the first place upon the persons principally concerned and in lesser degree on the wanangwa. In outlying bush villages and even in some of the larger ones, the duty is undoubtedly neglected at times.

Fully and painfully conscious of the defects in the system of collection of vital statistics imposed on us by local circumstances, a system bearing a close resemblance to the one in vogue at present, with the removal of the principal disadvantage of mental exertion, has been suggested. It requires a little more organisation, more stringent instructions, a little more inconvenience to the people, and a larger literate executive body.

In brief it is this, that numbered counterfoil books of four colours be printed, the colours representing sex and age groups as heretofore.

One or more centres are to be selected in each sultanate, which the people are to be instructed to attend on a certain date. They are there to be marshalled by their own chiefs, in groups according to the headmen whom they recognise. Each headman will divide his people into the sub-groups of sex and age required, and these sub-groups will file past the table where the enumerator stands to receive a numbered counterfoil in a colour appropriate to sex and age.

The enumerators enter on the cover of each book a few particulars as to date, place, sultanate and headman, and submit the books to us for collation after the last person has passed him.

The idea is admittedly crude and primitive in conception, but it is with a crude and primitive people that we are dealing.

It eliminates some of the disadvantages of the present procedure, in that tutored enumerators will be placed in charge, supervision of these will be practicable, no great mental effort will be required in issuing slips of paper and making an occasional entry of four lines, and the census will be over in a day. On the other hand, the people will be inconvenienced to the extent of attending a centre for a day, each headman will be required to report absentees, the cost will be higher than at present, though not disproportionate to the value of the information culled, and the information is anticipated to be more accurate than now holds.

Both methods may be tried at different times in the same year to ascertain their comparative utility or, alternatively, the method suggested above may be attempted on separate days in each sultanate, of which there are eleven, time being given for the enumerators to reach the centres chosen. This would extend the period of the census over a month, a disadvantage, but would greatly reduce the number of enumerators and supervisors and the cost.

Bearing in mind the numerous fallacies to which the figures obtained are subject and adding one or two that have been particularly in operation in this year, namely, the movement of large numbers of people to new settlements within the district on account of sleeping sickness and the unauthorised and unreported emigration of many from sultanate to sultanate and outside the district, their value is seen in truer perspective. Nevertheless, for purposes of comparison, various statistical rates have been worked out.

In Table I is given a summary of the census figures for 1928 and 1929, and by way of comparison the estimated population of each sultanate for 1926. No census or estimate was made in 1927.

It will be noted that there appears to have been a substantial decrease of population compared with 1928 in the sultanates of Usumbwa and Bugomba. How far this is real it is difficult to say, though both sultanates are notoriously tardy in giving their returns and their authenticity is very doubtful. At the same time, both have been badly smitten with sleeping sickness in the course of the last year. Ukamba and Mbogwe, also both in the sleeping sickness area, have suffered a minor diminution of population. All others show an increase, though all except Kahama Sultanate itself are known to have infected tsetse fly. It is our opinion, great as has been the devastation wrought by the pestilence of trypanosomiasis, that deaths from it directly do not solely account for the diminution in population in the sultanates mentioned. Unauthorised emigration must certainly account for a good number, though the exact extent of this is unknown. For the rest, the inaccuracy of computation must be held responsible.

It is to be noted too that the number of children under a year, an indirect gauge of births, bears no constant proportion to the total population in each sultanate, nor even to the female section of it. In every instance the females preponderate.

In Table III a method is demonstrated of estimating the total population by multiplying the number of taxpayers by a factor which represents the female dependents and children of the former. In 1926 this factor is seen to be variable. The average of these is taken as a constant factor for estimations in subsequent years, including 1927.

Table II shows the number of taxpayers per financial year. A constant general diminution in their numbers is noticeable since 1926, fairly gradual in some instances. In the case of Kahama Sultanate alone, unaffected hitherto by infected tsetse fly, has there been an increase up to 1928 and a sudden drop in numbers in 1929. It is to be mentioned that the figures of taxpayers for 1929 is that for the calendar year and is not a true index of the totals, as three months still remain for the completion of the financial year.

The principal circumstances, speaking generally, for this decline in the number of taxpayers on which the estimates of population are based in this experiment are the following :—

(*a*) There have been minor boundary alterations in the districts since 1926.

(*b*) Various rulings on the payment of tax by females has resulted in a decrease each year.

(*c*) A large number of taxpayers from the district were engaged in railway construction work outside the district in 1927.

(*d*) Certificates of exemption from tax were issued to those who had suffered from sleeping sickness in 1928 and 1929. These account in large measure for the decrease in taxpayers, especially in Usumbwa, Ngogwa and Mbogwe.

It also accounts for a large number in Kahama Sultanate, which, though not yet affected by sleeping sickness as far as we are aware, has had its quota of patients from among those who have sojourned in affected areas.

(*e*) Unauthorised emigration is also a cause.

This method of estimation of populations is demonstrably useless in an area such as Kahama in present conditions.

A comparison of births and deaths (under and over a year) is made in Table IV for the last three years. Still-births are entered on a separate form, IVA, and are not included either as births or deaths. Migration Table IVB.

It is observed that births have steadily increased since 1927, so have deaths in both age groups, except those " under a year " in 1929. We are inclined to ascribe this to a greater attention to the duty of registration, though in regard to the increase in the number of deaths among people over a year of age, there is little doubt that sleeping sickness is a powerful factor. In general, more male children are born and die each year than female, and more men die annually than women. The male sex in infancy appears to be more delicate or more difficult to rear. In adult life the greater death-roll among men is probably explained by the more numerous hazards they face by reason of their sex. The slight excess of adult female deaths over those of the male in the totals for the three years is, however, to be remarked.

Table V contains information relative to combined populations, deaths, births and the principal rates for 1929 in the district.

D. 10, the sultanate of Ungoni, has the highest gross death and infantile mortality rate, and a population second lowest of the sultanates. This is a chiefdom in the heart of Usumbwa, peopled by a proud warlike race of foreigners to the district. Till late in 1929, these people had to traverse about five miles of foreign territory to reach the nearest clinic for medical assistance. Five miles to a native is no great distance, many have travelled fifty and more to obtain medical treatment. But with the Wangoni, their pride prevents them, with rare exceptions, from covering that distance through country not their own. They have availed themselves little of the facilities offered at the nearest medical station, though help has often been taken to them on request, in their own little domain. Here, too, the wave of sleeping sickness on its eastward roll has engulfed the entire sultanate.

D. 5 Mbogwe, a hilly chiefdom in the north, vies with D. 2 Usumbwa in having the lowest gross death and infant mortality rate. For population and size these rates make Usumbwa stand lowest (or best), but, large and unwieldy as the chiefdom is, its figures are most unreliable.

We come to a consideration, summarised in Table VI, of the vital statistics of the three special areas.

It is to be remarked that, owing to misunderstanding of instructions on the part of the chiefs, the figures of births and deaths, and emigrants and immigrants for each portion of a sultanate within two of these areas, were omitted for the first month of the year and for the following three months, including April, totals undifferentiated in regard to sultanates were given. The totals of all four sultanates are therefore treated as from one area (as they are), in Table VI, but so as not to spoil the sequence, the average of births and

deaths, etc., for the last eleven months of the year has been taken to represent hypothetically those for January.

Age groups in these special areas are shown in Table VII, with the corresponding groups for 1928, on the second nominal count, for uniformity. It will be remembered that two nominal rolls of each area were taken last year and the differences were considerable.

In the Kahangobo triangle this year's count shows a diminution on the first of last year and an increase on the second, in point of total population. The figures for the Italungutwa triangle show the same relative differences. Ungoni in this connection reverses the relation, being higher than on last year's first and lower on the second count. The differences are not great, but, in consideration of the small totals, are marked.

It is, moreover, interesting to note the differences between the figures of the general census on Ungoni (D.10) and those of the special one. The discrepancies are indices of error, in the former more than in the latter, though both are in all probability inaccurate in degree from various causes. Most marked are the differences in the number of children below a year of age, and we consider, from personal observation, that the special census figures, though low, are nearer the mark.

Ages have, of course, to be gauged intelligently. A child unable to crawl or walk is entered as being under a year. The number of teeth it possesses are an insufficient guide to age, though taken into consideration in cases of doubt. Ages above this are also gauged, and it is considered that an overlap in one age group is counterbalanced by an undercount in the next.

The general and special statistical rates are given for what they are worth, and, in that ages over 20 years present some difficulty in estimation, the fertility or special birth-rate has as hitherto been worked out on the basis of the total of women over 16 years of age.

The high infant mortality in this chiefdom has been commented upon. All rates have been worked out on the basis of proportion to a thousand.

Table I.—Estimations of Population and Census, 1926 to 1929, Kahama District.

No.	Sultanate.	Approximate area in Square Miles.	Villages.	1926 Estimated Population.	1927 Estimated Population.	Census, 1928.					Census, 1929.				
						M./1	F./1	1/M.	1/F.	Total.	M./1	F./1	1/M.	1/F.	Total.
1	Kahama and Township	500	16	20,200	24,251	9,356	12,206	630	701	22,893	9,731	12,036	600	686	23,053
2	Usumbwa ..	3,000	18	17,000	13,527	8,045	9,771	464	553	18,833	7,184	7,720	627	688	16,219
3	Ngogwa ..	800	8	7,300	6,922	2,927	3,860	188	169	7,144	3,037	3,958	158	186	7,339
4	Ukamba ..	500	8	3,800	3,828	1,569	1,948	81	90	3,688	1,493	1,884	110	127	3,614
5	Mbogwe ..	500	8	5,100	4,687	2,328	2,887	263	241	5,719	2,432	2,912	198	172	5,714
6	Uyogo ..	350	10	7,300	8,224	3,231	3,382	351	335	7,299	3,590	4,672	240	278	8,780
7	Msalala ..	350	4	3,600	3,423	1,297	1,721	78	86	3,182	1,363	1,777	78	101	3,319
8	Busangi ..	350	7	5,300	4,654	1,966	2,678	257	228	5,129	2,147	2,750	135	173	5,205
9	Bulungwa ..	200	5	4,200	3,780	1,785	2,069	103	83	4,040	1,767	2,250	145	124	4,286
10	Ungoni ..	100	2	1,000	947	339	486	96	102	1,023	405	621	100	83	1,209
11	Bugomba ..	500	2	1,100	1,004	442	595	27	20	1,084	309	416	63	59	847
	Totals ..	7,150	88	75,900	75,247	33,258	41,603	2,538	2,608	80,034	33,458	40,996	2,454	2,677	79,585

M./1 = Male adults and children over one year.

F./1 = Female adults and children over one year.

1/M. = Male children under one year.

1/F. = Female children under one year.

Table II.—Taxpayers, Kahama District, 1926 to 1929.

	Sultanate :—	Kahama.	Usumbwa.	Ngogwa.	Ukamba.	Mbogwe.	Uyogo.	Msalala.	Busangi.	Bulungwa.	Ungoni.	Bugomba.
	Map Number :—	D. 1.	D. 2.	D. 3.	D. 4.	D. 5.	D. 6.	D. 7.	D. 8.	D. 9.	D. 10.	D. 11.
1926	.. .. ..	8,762	5,020	2,941	1,509	1,968	3,131	1,398	1,780	1,549	382	370
1927	.. .. ..	8,982	5,010	2,564	1,418	1,736	3,046	1,268	1,724	1,400	351	372
1928	.. .. ..	9,078	3,991	2,299	1,421	1,685	2,985	1,166	1,694	1,359	302	325
1929	.. .. ..	7,729	793	1,600	900	700	1,200	700	901	406	316	216

Table III.—Population as Estimated in Kahama District on Taxpayers.

No.	1926.				1927.		1928.			1929.		
	Estimated Population.	Variable Factor.	Constant Factor 2·7.	Increase or Decrease, + or −	Constant Factor 2·7.	Increase or Decrease on 1926 by Constant Factor, + or −	Census of Population.	Constant Factor 2·7.	Increase or Decrease on 1928 Census, + or −	Census of Population.	Constant Factor 2·7.	Increase or Decrease on 1929 Census, + or −
D. 1	20,200	2·30	23,657	+ 3,687	24,251	+ 594	22,893	24,510	− 1,617	23,053	20,868	+ 3,085
D. 2	17,000	3·34	13,554	− 3,446	13,527	− 27	18,833	10,775	+ 8,058	16,219	2,141	+ 14,078
D. 3	7,300	2·48	7,940	+ 640	6,922	− 1,018	7,144	6,207	+ 937	7,339	4,320	+ 3,019
D. 4	3,800	2·52	4,074	+ 274	3,828	− 246	3,688	3,836	− 148	3,614	2,430	+ 1,184
D. 5	5,100	2·59	5,313	+ 213	4,687	− 626	5,719	4,549	+ 1,170	5,714	1,890	+ 3,824
D. 6	7,300	2·33	8,453	+ 1,153	8,224	− 229	7,299	8,059	− 760	8,780	3,240	+ 5,540
D. 7	3,600	2·58	3,774	+ 174	3,423	− 351	3,182	3,148	+ 34	3,319	1,890	+ 1,429
D. 8	5,300	2·98	4,806	− 494	4,654	− 152	5,129	4,573	+ 556	5,205	2,432	+ 2,773
D. 9	4,200	2·71	4,182	− 18	3,780	− 402	4,040	3,669	+ 371	4,286	1,096	+ 3,190
D. 10 ..	1,000	2·60	1,031	− 31	947	− 84	1,023	815	+ 208	1,209	853	+ 356
D. 11 ..	1,100	2·91	999	− 102	1,004	+ 5	1,084	877	+ 207	847	583	+ 264
	75,900	2·67	77,783	+ 2,050	75,247	− 2,536	80,034	71,018	+ 9,016	79,585	41,743	+ 37,842

Table IV.—Births and Deaths for 1927, 1928 and 1929.

No.	Sultanate.	1927.						1928.						1929.					
		Births.		Deaths under a year.		Deaths over a year.		Births.		Deaths under a year.		Deaths over a year.		Births.		Deaths under a year.		Deaths over a year.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Kahama and Township	300	274	59	67	110	136	359	352	113	80	110	122	463	505	129	111	188	157
2	Usumbwa	132	75	51	45	97	83	104	110	55	54	129	97	93	97	18	20	115	107
3	Ngogwa	126	100	52	36	68	60	116	127	32	36	96	108	123	136	47	37	73	63
4	Ukamba	62	58	20	18	23	42	79	75	11	18	32	48	82	60	23	13	55	49
5	Mbogwe	107	66	16	19	35	42	58	70	5	2	75	53	94	69	6	14	37	34
6	Uyogo	95	104	26	29	39	44	159	150	56	45	64	81	152	144	29	40	122	148
7	Msalala	45	59	13	18	16	20	61	50	24	16	28	28	72	81	26	19	18	27
8	Busangi	67	58	19	22	29	41	104	108	42	23	41	47	96	101	33	41	37	38
9	Bulungwa	34	31	10	14	21	18	47	48	15	9	47	38	78	63	14	15	35	26
10	Ungoni	15	15	6	12	15	18	25	24	6	5	12	19	15	13	12	8	13	20
11	Bugomba	22	10	8	4	19	14	12	5	10	2	32	21	7	6	2	1	12	5
		1,005	850	280	284	472	518	1,124	1,119	369	290	666	662	1,275	1,275	339	319	705	674

Table IVa.—Still-births, 1929.

Sultanate :—	Kahama.		Usumbwa.		Ngogwa.		Ukamba.		Mbogwe.		Uyogo.		Msalala.		Busangi.		Bulungwa.		Ungoni.		Bugumba.		Kahama Township.		Totals.	
Map Number :—	D. 1.		D. 2.		D. 3.		D. 4.		D. 5.		D. 6.		D. 7.		D. 8.		D. 9.		D. 10.		D. 11.		—		—	
Months.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
January	1	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	3	3
February ..	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	2	2
March	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	—	5
April	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	3	1
May	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
June	1	1	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	1	6	2
July	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	3	—
August	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	3	2
September ..	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	1	4	1
October	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
November ..	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	3	2
December ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	2	1
	2	1	1	—	4	1	3	3	—	—	—	—	—	—	—	—	—	—	—	—	1	—	18	15	29	20

It is obvious that all Still-births are not notified.

Table IVb.—Immigrants and Emigrants, 1928.

No.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Totals.	
	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.
D. 1 ..	2	10	7	13	2	8	—	10	—	4	2	17	—	13	—	5	—	43	18	22	17	—	1	6	39	151
D. 2 ..	—	—	—	—	6	2	—	12	—	9	—	26	—	11	—	7	—	1	—	8	—	—	—	—	6	76
D. 3 ..	3	6	—	3	22	15	—	4	—	4	—	1	—	3	—	1	5	23	2	14	—	—	2	1	34	75
D. 4 ..	1	—	—	23	—	35	—	30	—	21	—	16	1	2	—	—	—	3	—	—	15	—	—	2	17	132
D. 5 ..	—	—	14	4	2	—	—	2	—	1	7	8	1	—	4	6	2	9	—	15	—	—	—	—	30	45
D. 6 ..	4	4	2	—	—	3	—	3	—	—	—	4	1	2	—	3	2	10	8	14	—	—	—	—	17	43
D. 7 ..	1	6	—	8	5	85	7	13	1	8	7	4	—	6	1	14	—	8	—	13	—	—	—	—	22	165
D. 8 ..	—	18	—	—	—	2	—	12	—	1	—	7	—	11	—	8	—	2	—	18	—	—	—	—	—	79
D. 9 ..	7	—	—	7	—	4	—	—	—	—	3	1	—	2	3	—	4	2	—	7	—	—	3	2	20	25
D. 10 ..	—	21	—	—	—	—	1	2	—	13	—	10	—	4	—	13	—	5	—	—	—	—	—	—	1	68
D. 11 ..	1	33	1	—	—	3	1	1	—	2	—	1	—	—	—	—	—	9	—	12	—	—	—	—	3	61
	19	98	24	58	37	157	9	89	1	63	19	95	3	54	8	57	13	115	28	123	32	—	6	11	189	920

Im. = Immigrants. Em. = Emigrants.

Table IVb.—Immigrants and Emigrants, 1929.

No.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Totals.	
	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.	Em.	Im.
D. 1 ..	—	—	—	3	12	1	10	—	32	—	23	1	—	—	—	1	—	—	4	4	—	12	—	26	81	48
D. 2 ..	19	—	38	—	37	18	48	—	—	—	6	—	16	—	23	—	4	—	1	—	62	—	—	—	254	21
D. 3 ..	7	9	6	1	6	—	6	—	12	—	12	—	—	—	6	—	1	1	—	—	—	1	—	—	56	12
D. 4 ..	—	1	—	6	6	—	20	2	12	—	4	—	3	2	4	2	—	—	—	—	—	—	—	1	49	14
D. 5 ..	5	2	—	—	5	2	6	5	—	—	4	4	—	—	—	—	2	5	—	2	—	4	—	—	22	24
D. 6 ..	—	—	—	—	4	—	6	—	6	—	12	—	4	—	5	—	—	—	—	—	1	—	2	—	40	—
D. 7 ..	1	—	—	—	14	—	5	—	16	—	9	1	1	3	7	1	36	—	—	2	—	—	—	1	89	8
D. 8 ..	4	—	—	—	—	—	1	3	—	11	14	16	—	—	—	—	—	17	1	—	—	—	8	5	28	52
D. 9 ..	6	4	7	6	—	3	4	—	—	—	—	—	—	—	—	1	—	2	—	—	—	—	—	4	17	20
D. 10 ..	2	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—	—	9	—
D. 11 ..	2	—	4	—	5	1	—	—	3	—	—	—	—	—	1	—	1	—	—	—	1	—	—	—	17	1
	46	16	55	16	89	25	106	10	81	11	91	22	24	5	46	5	44	25	6	8	64	17	10	37	662	200

Im. = Immigrants. Em. = Emigrants.

Table IVb.—Returned Emigrants, 1929.

No.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
D. 1	—	—	—	—	1	—	—	—	—	—	—	6	7
D. 2	—	—	—	—	—	—	—	—	—	—	—	—	—
D. 3	—	—	1	—	1	—	—	—	—	1	1	—	4
D. 4	—	—	29	14	4	3	—	15	3	—	1	—	69
D. 5	—	—	—	8	—	—	—	—	10	—	—	—	18
D. 6	—	—	—	2	2	3	—	9	—	—	—	—	16
D. 7	—	—	5	8	1	47	—	11	1	29	—	12	114
D. 8	—	—	—	3	—	15	—	—	1	—	—	—	19
D. 9	—	—	—	—	—	—	—	—	—	—	—	—	—
D. 10	—	—	—	—	—	7	—	—	8	7	8	—	30
D. 11	—	—	—	—	—	—	—	4	—	13	—	—	17
	—	—	35	35	9	75	—	39	23	50	10	18	294

Table V.—Vital Statistics of Kahama District, 1929.

No.	Population.	Total Births.	Birth Rate.	Total Deaths.	Deaths under one year.	Death-rate per mille.	Infantile Mortality Rate.
D. 1	23,053	968	42 ±	585	240	25	248 ±
D. 2	16,219	190	12 ±	260	38	16	200
D. 3	7,339	259	35	220	84	30 ±	324
D. 4	3,614	142	39	140	36	39 ±	254 ±
D. 5	5,714	163	29 ±	91	20	16 ±	123 ±
D. 6	8,780	296	34 ±	339	69	39 ±	233
D. 7	3,319	153	46	90	45	27	294
D. 8	5,205	197	38 ±	149	74	29 ±	376 ±
D. 9	4,286	141	33 ±	90	29	21 ±	206 ±
D. 10	1,209	28	23	53	20	44 ±	714
D. 11	847	13	15	20	3	24 ±	231 ±
	79,585	2,550	32	2,037	658	26 ±	258

Table VI.—Vital Statistics of Special Areas.

Area No.	Population.							Births.						Deaths.										No. of Huts.	Persons per Hut.
	M./1	F./1	Total.	1/M.	1/F.	Total.	Grand Total.	M.	F.	Total.	W. of C.B. Age.	B. Rate.	F. Rate.	1/M.	1/F.	Total.	M./1	F./1	Total.	Grand Total.	Crude Death Rate. M. & F.	Crude Death Rate. M.	Crude Death Rate. F.	I.M. Rate.		
Kahangobo Triangle.																									
D. 1, 3, 7 and 8..	2,074	2,667	4,741	114	108	222	4,863	107	84	191	1,928	38	99	29	25	54	32	27	59	113	23 ±	15	10	283 ±	1,757	3 ±
Ungoni Triangle.																									
D. 10	498	708	1,206	21	16	37	1,243	15	13	28	537	23 ±	52	12	8	20	13	20	33	53	43 ±	26	28	714	496	3 ±
Itarlungutwe Triangle.																									
D. 3, 5 and 8 ..	377	467	845	11	11	22	866	11	14	25	339	29 ±	74 ±	7	7	14	9	3	12	26	30 ±	24 ±	6	560	222	3 ±

M./1 = Males over one year.
F./1 = Females over one year.
1/M. = Males under one year.
1/F. = Females under one year.

W. of C.B. Age = Number of women of child-bearing age.
B. Rate = Birth Rate.
F. Rate = Fertility Rate.
I.M. Rate = Infant Mortality Rate.

Table VII.—Census Figures of Special Areas of Kahama District.

Year.	Males.							Females.							Combined Total.
	Under 1 year.	2–5.	6–10.	11–15.	16–20.	21 and over.	Total.	Under 1 year.	2–5.	6–10.	11–15.	16–20.	21 and over.	Total.	
Kahangobo Triangle.															
1928.. ..	58	166	144	165	120	643	1,296	53	160	143	132	65	1,132	1,685	2,981
1929.. ..	64	170	168	142	104	658	1,306	58	159	161	139	129	1,031	1,677	2,983
Itarlungutwe Triangle.															
1928.. ..	11	45	39	54	20	214	383	17	48	35	44	22	327	493	876
1929.. ..	11	45	52	39	31	210	388	11	48	41	39	27	312	478	866
Ungoni Triangle.															
1928.. ..	16	48	40	64	—	318	486	24	50	50	64	—	538	726	1,212
1929.. ..	21	55	55	48	37	303	519	16	62	59	50	33	504	724	1,243

Patients and Diseases.

At the beginning of the year we had the same number of clinics, welfare centres and native hospitals in the district as in 1928. One clinic and a native authority hospital at Runzewe were closed in September, a native authority hospital at Ushirombo was closed at the same time, and our welfare centre at Uyogo was handed over to sleeping sickness in December. These closures and transfers have considerably modified our activities and results, and restricted our sphere to the remaining stations of Itaranganya and Kahama, which are now both maternity and child welfare clinics.

The district is still our charge, however, and in co-operation with the sleeping sickness section, information relative to disease among the natives has been obtained for the last quarter of the year from their eight treatment centres under native dispensers dotted about the areas we have been compelled by circumstances to relinquish.

The numbers of patients shown in the combined in- and out-patients return are for the entire district, regarded from the point of view of an epidemiological survey, and include those from centres such as the Native General Hospital in Kahama, Native Authority hospitals at Runzewe and Ushirombo.

The number of patients from each of these places within the district is also shown separately.

A total of 25,577 patients has been treated, and these include 3,798 patients admitted. Deaths from all causes in clinics, etc., under our management equal 246, or 6·4 per cent. of those admitted to hospital.

Tables VIII, IX, X and XI give totals in regard to each centre for 1928 and 1929 and the prevailing diseases in each. The returns in the appendix show details of disease.

Kahama Clinic.

This clinic was the charge of Sister and Health Visitor B. G. Allardes till the end of October, and the magnitude and excellence of her endeavours will be appreciated when it is realised that, for the greater part unassisted, and combined with her other duties, she delivered nearly a thousand mothers. Sister and Health Visitor C. Kemp took charge of the clinic from November, and has carried on the work since.

There were 1,136 confinements conducted in the clinic in 1929, as compared with 21 in 1928 and 10 in 1927. The difference is marked, and is due to the personal interest taken in the scheme by the Assistant District Officer and the Regent, Kazi Moto, of the Kahama sub-district. Stimulated by the progress of other and similar ventures, the chiefs whose country lay within a reasonable distance of the clinic were approached and the advantages of taking a more active interest in the clinics which they had asked for and helped to build, were explained. The record of the clinic for the previous year and a-half showed very few maternity cases in comparison with the number in the district. Considering that most of these cases were abnormal, the record was excellent. Some such step as that taken had been previously urged, but the time was not regarded as propitious. Direct compulsion of native mothers to attend the clinic was to be avoided. The more intelligent chiefs were appealed to and advantages stressed. Appeal was made to their common sense, and their patronage and that of their people solicited. In last year's Report it was stated that the natural suspicion of the native of anything foreign, their social customs, their inertia, their womenfolk's imagined freedom from ills connected with childbirth, and their respect and fear of the witch doctors accounted for their apathy towards most matters of Government concern, including medical facilities, except where they saw immediate and personal advantage. This still holds and will continue to hold for some time, unless some expedient is devised to draw them out. Generally speaking, it is apathy from which they suffer, not antipathy. The European is also respected and possibly feared, but both sentiments are different in degree and quality from that accorded their own kind. This is but natural. With a knowledge of the advantages to be derived from attendance at clinics, a knowledge born of experience in other directions than those of maieutics up to 1928 and in this direction as well since then ; with a full cognisance that medical attention, nursing, good food in quantity more than they get in their normal existence, fair accommodation and comfort, and no interference in their ordinary liberty

or customs, except those that are *mal per se*, are offered ; with all this they are held back by the mental and physical handicaps ingrained in them, that are enumerated above.

It is for their collective and individual good, and any reasonable steps taken through their own Native Authority to induce or impel attendance in childbirth is to be commended. Their objections are mainly imaginary, though imagination may be a powerful objection. Some of those who have been communicative enough have expressed surprise at their fears and gratitude for the help afforded. It is unusual for the natives to voice their sentiments unsolicited.

Coercion is foreign to British sentiment and principle in general, but, ugly as the word sounds, there is argument in its favour, when benefit accrues directly to the people, with no objection greater than that it is "saving them against themselves."

There were fewer than 3 per cent. of deaths among those born alive in the clinic in the year.

The greater number of maternity cases attended in the year were due to diplomatic suasion of some of the more intelligent neighbouring chiefs, who have the respect, loyalty and sympathy of their followers ; and the chiefs, and to a lesser extent the people, have seen the benefits accruing to them in the health of the mothers and their safe delivery. To a lesser extent the people, it has been remarked, because the native's little world does not extend far beyond the boundaries and interests of his own home, and vital statistics have little meaning to him. Some there must be to whom the clinics are an utter failure. These are the unfortunates whose children could not be saved. The voices of these 3 per cent. may be more clamorous and for longer than those of the 97 per cent. of satisfied parents. This is a human failing, and not confined to Africa and that portion of it that is our field alone. It is surprising, though, that the same misfortune, occurring no matter how often outside the clinics, whether under the supervision of the old women of the household or the witch doctor, is attributed to the intervention of God or an evil spirit and relegated without ado to the limbo of the past.

All relevant information as to the activities of this clinic are contained in the returns appended. For information, a few items of interest are collected in Table XII.

Itaranganya Clinic.

On her return from leave, Senior Nursing Sister Miss E. L. Kemsley took over charge of this centre from Sub-Assistant Surgeon R. H. Doshi. Previously a welfare centre, Itaranganya has now been converted into a maternity and child welfare centre. There are a general ward and temporary sleeping sickness wards attached. The numbers of obstetric cases have increased in this centre, with a European sister-in-charge.

Runzewe Clinic.

For the first quarter of the year this clinic was the charge of Drs. C. and (Mrs.) F. G. Wilcocks. Ill-health unfortunately deprived us of their valuable services. Sub-Assistant Surgeon Harcharan Singh later took over the work, and with the re-settlement of the people in another area the clinic was closed.

Uyogo Welfare Centre.

Our welfare centre here under Sub-Assistant Surgeon Basant Singh had for some time past been little more than a sleeping sickness hospital, and was handed over at the end of the year.

Sleeping Sickness.

Since its discovery in the district at the beginning of 1928, the disease spread with great rapidity, conditions being favourable, and has engulfed the entire district, with the exception of Kahama and neighbouring portions of the eastern sultanates.

In the early stages, all cases were treated in our clinics, welfare centres and auxiliary hospitals, and many are still treated in them. The special sleeping sickness arm of the Department has established a base at Ushirombo, and several small treatment centres in the district where necessary. It has also taken over in the south our welfare centre, and has had temporary structures made at our remaining clinics for the accommodation of their cases.

The presence in our midst of this disease and the measures taken, of necessity, to check its spread, have naturally caused some uneasiness among the people and have undoubtedly interfered with our investigation. Sleeping sickness cases are dealt with in Tables XII and XIV. Other than sleeping sickness 1,480 cases of all diseases have been treated as out-patients in the sleeping sickness outposts. These figures have not been included in the general total.

The amended list of sleeping sickness cases is supplied in Table XII. Two European Government officials and one Asiatic contracted this disease in the district during 1929. A table, No. XIV, is also included, showing the localities of the treatment and the numbers treated. Under Ushirombo are included its eight outposts in these areas.

The special mortality rate for trypanosomiasis is 127·76 per thousand of those affected with the disease.

Leprosy.

A small leper settlement for the district exists at Bwenda, near Ushirombo. It is in charge of a native dispenser and is supervised by a medical officer from time to time.

The figures for the settlement are given below :—

Admissions		1
Deaths		1
Patients—	Males.	Females.
With nodulary leprosy	1	3
With nerve leprosy	—	7
With mixed leprosy	6	1

The settlement is not enclosed, but patients are housed and fed and permitted to cultivate certain areas. A few occasionally abscond.

Table VIII.—In-patients, 1929.

Name of Hospital.	Remaining from 1928.	Admitted.	Died.	Total Treated.
Kahama Clinic	23	1,776	18	1,799
Kahama Hospital	34	829	109	863
Runzewe Clinic	17	110	7	127
Runzewe Hospital	26	99	14	125
Itaranganya Clinic	10	554	60	564
Uyogo Welfare Centre	9	297	38	306
Ushirombo (Native Dispenser)	—	14	—	14
Total	119	3,679	246	3,798

Out-patients.

Name of Hospital.	Males.	Females.	Children.		Totals.
			Males.	Females.	
Kahama Clinic	—	2,571	461	1,711	4,743
Kahama Sultanate (Native Dispenser)	368	256	—	—	624
Kahama Hospital	2,849	647	—	—	3,496
Runzewe Clinic	90	601	—	—	691
Runzewe District	725	911	—	—	1,636
Runzewe Hospital	437	46	—	—	483
Itaranganya Clinic and District	2,994	3,100	—	—	6,094
Uyogo Clinic and District	1,875	1,747	—	—	3,622
Masumbwe	31	29	—	—	60
Ushirombo	176	154	—	—	330
Total	9,545	10,062	461	1,711	21,779

Table IX.—In-patients, 1928.

Name of Hospital.	Remaining from 1927.	Admitted.	Died.	Total Treated.
Kahama Clinic	4	303	32	307
Kahama Hospital	9	290	25	299
Runzewe Clinic	—	225	25	225
Runzewe Hospital	16	181	6	197
Itaranganya Welfare Centre	—	104	7	104
Uyogo Welfare Centre	—	140	12	140
Ushirombo (Native Dispenser)	—	295	38	295
Total	29	1,538	145	1,567

Out-patients.

Name of Hospital.	Males.	Females.	Children.	Total.
Kahama Clinic	—	2,006	1,357	3,363
Kahama Sultanate	365	281	—	646
Kahama Hospital	2,159	76	—	2,235
Runzewe Clinic	167	779	—	946
Runzewe District	1,421	1,858	—	3,279
Runzewe Hospital	693	3	—	696
Itaranganya Clinic and District	2,676	2,453	—	5,129
Uyogo Clinic and District	2,185	1,884	—	4,069
Masumbwe	518	388	—	906
Ushirombo	753	884	—	1,637
Total	10,937	10,612	1,357	22,906

Table X.—Prevailing Diseases, 1929.

	In-patients.	Out-patients.	Totals.
Kahama Clinic—			
Yaws	3	362	365
Syphilis	11	624	635
Pulmonary diseases	12	580	592
Ankylostomiasis	13	419	432
Tryps	47	46	93
Total	86	2,031	2,117
Kahama Hospital—			
Yaws	18	384	402
Syphilis	5	230	235
Pulmonary diseases	53	649	702
Ankylostomiasis	18	32	50
Tryps	515	6	521
Total	609	1,301	1,910
Itaranganya Clinic—			
Yaws	51	2,072	2,123
Syphilis	34	1,064	1,098
Pulmonary diseases	23	649	672
Ankylostomiasis	90	540	630
Tryps	146	69	215
Total	344	4,394	4,738
Uyogo Welfare Centre—			
Yaws	5	697	702
Syphilis	11	434	445
Pulmonary diseases	2	633	635
Ankylostomiasis	3	30	33
Tryps	262	—	262
Total	283	1,794	2,077

Table X.—Prevailing Diseases, 1929—*continued.*

	In-patients.	Out-patients.	Totals.
Runzewe Clinic—			
Yaws	12	1,127	1,139
Syphilis	3	101	104
Pulmonary diseases	7	260	267
Ankylostomiasis	8	88	96
Tryps	69	119	188
Total	99	1,695	1,794
Runzewe Hospital—			
Yaws	31	178	209
Syphilis	3	15	18
Pulmonary diseases	2	60	62
Ankylostomiasis	7	18	25
Tryps	61	80	141
Total	104	351	455
Ushirombo and Outposts—			
Yaws	7	65	72
Syphilis	2	29	31
Pulmonary diseases	—	81	81
Ankylostomiasis	—	7	7
Tryps	701	—	701
Total	710	182	892
Total of all Clinics, etc.—			
Yaws	127	4,886	5,012
Syphilis	69	2,497	2,566
Pulmonary diseases	99	2,912	3,011
Ankylostomiasis	139	1,134	1,273
Tryps	1,801	335	2,136
Total	2,235	11,763	13,998

Note.—701 cases of sleeping sickness not included in our general returns.

Tryps = Trypanosomiasis.

Table XI.—Prevailing Diseases, 1928.

	In-patients.	Out-patients.	Totals.
Kahama Clinic—			
Yaws	10	641	651
Syphilis	13	479	492
Pulmonary diseases	20	463	483
Ankylostomiasis	39	134	173
Trypanosomiasis	60	—	60
Total	142	1,717	1,859
Kahama Hospital—			
Yaws	14	665	679
Syphilis	38	231	269
Pulmonary diseases	13	483	496
Ankylostomiasis	11	87	98
Trypanosomiasis	67	10	77
Total	143	1,476	1,619

TABLE XI.—PREVAILING DISEASES, 1928—*continued.*

	In-patients.	Out-patients.	Totals.
ITARANGANYA WELFARE CENTRE—			
Yaws	7	2,359	2,366
Syphilis	4	838	842
Pulmonary diseases	6	331	337
Ankylostomiasis	7	20	27
Trypanosomiasis	27	7	34
Total	51	3,555	3,606
UYOGO WELFARE CENTRE—			
Yaws	24	344	368
Syphilis	18	323	341
Pulmonary diseases	10	589	599
Ankylostomiasis	10	6	16
Trypanosomiasis	27	—	27
Total	89	1,262	1,351
RUNZEWE CLINIC—			
Yaws	93	334	427
Syphilis	29	86	115
Pulmonary diseases	14	125	139
Ankylostomiasis	11	123	134
Trypanosomiasis	49	11	60
Total	196	679	875
RUNZEWE HOSPITAL—			
Yaws	100	1,654	1,754
Syphilis	5	162	167
Pulmonary diseases	6	317	323
Ankylostomiasis	7	764	771
Trypanosomiasis	49	41	90
Total	167	2,938	3,105
MASUMBWE (Sleeping Sickness Measures)—			
Yaws	—	137	137
Syphilis	—	30	30
Pulmonary diseases	—	53	53
Ankylostomiasis	—	32	32
Trypanosomiasis	—	327	327
Total	—	579	579
USHIROMBO (Native Dispenser)—			
Yaws	84	759	843
Syphilis	10	99	109
Pulmonary diseases	3	162	165
Ankylostomiasis	17	82	99
Trypanosomiasis	129	25	154
Total	243	1,127	1,370
TOTAL OF ALL CLINICS, ETC.—			
Yaws	332	6,893	7,225
Syphilis	117	2,248	2,365
Pulmonary diseases	72	2,523	2,595
Ankylostomiasis	102	1,248	1,348
Trypanosomiasis	408	421	828
TOTAL	1,031	13,333	14,361

TABLE XII.—SLEEPING SICKNESS CASES.

Month.	1928.*		1929.†	
	New Cases.	Deaths.	New Cases.	Deaths.
January	1	—	147	18
February	13	—	132	23
March	38	1	148	14
April	64	4	153	20
May	73	11	141	12
June	62	5	126	13
July	84	7	151	21
August	52	23	118	13
September	84	15	409	36
October	120	16	217	23
November	223	30	216	42
December	134	24	163	36
TOTAL	948	136	2,121	271

* Including one European, one Indian and two natives, all of medical staff.
† Including two European officials, one Indian, one Arab and two native officials.

TABLE XIII.—DISTRIBUTION OF CASES OF SLEEPING SICKNESS ACCORDING TO CENTRE OF TREATMENT, 1929.

Name of Hospital—	Cases.	Deaths.
Kahama Clinic and Hospital	614	86
Itaranganya	215	27
Uyogo	262	35
Runzewe Clinic and Hospital	329	8
Ushirombo and other sleeping sickness posts	701	115
TOTAL	2,121	271

VACCINATION.

In the form below is shown the results of vaccination by our African District Sanitary Inspectors during the year. Vaccination is not compulsory in the district. Not many object to the process, but many nullify the efforts of the vaccinators by washing or wiping off the vaccine as soon as they can without detection, or by other means. Others absent themselves on days of re-inspection.

The results are poor. Under 50 per cent. were successful, 28 per cent. were definitely negative, and 22 per cent. were not seen again.

The poor successful results are not attributable to the vaccine, which in experiments personally conducted was found to be potent enough to give a percentage of success in unvaccinated children of 98. The reasons for the lack of success in greater degree are found above and in the fact that vaccine has to be transported on arrival in the district in conditions that tend to its early deterioration. Smaller quantities are therefore now being asked for as required.

VACCINATION REPORT, 1929.

Name of Hospital.	Total Vaccinated.	Successful.	Negative.	Not seen again.
Uyogo	2,621	1,098	1,052	471
Ushirombo	1,588	429	537	622
Itaranganya	3,408	2,137	368	903
Kahama (by N.D.)	1,954	1,175	456	323
Kahama (by A.D.S.I.)	1,393	719	519	155
Runzewe	651	234	339	78
TOTAL	11,615	5,792	3,271	2,552

SPECIAL.

1. The prevalence of bilharzia among school children led us to continue our investigations commenced last year. A rough survey of the district was made in relation to the presence of snails in the water supplies. Especially those sources were inspected to which cases of bilharziasis had been traced. In all of the latter sources and 85 per cent. of the former were snails of different varieties and species collected. These have been provisionally identified as follows :—*Isidora* (*forskali* ?), *Isidora* (*globosa* ?), *Physa* (?) and *Planorbis* (?).

Specimens have been sent to the British Museum for further examination.

Three or four varieties and species of snail have sometimes been found at the same source.

The places in which these shells have been picked up are of two main kinds all over the district :—

(*a*) Surface water holes.
(*b*) Small irrigation channels led through a sugar-cane plantation.

Both are usually fed from a spring, which gradually fails as the dry season advances, and both are choked as a rule with weed and vegetable debris, except for a small space where water is drawn.

Twenty-seven per cent. of snails dissected showed *cercariæ*. *Cercariæ* were found with almost equal frequency in what have been identified as *Phyops* and *Isidora*, and less frequently in the others.

Boys from seven to seventeen appear to be the most affected. No women or girls have reported having had the disease. Female reticence may be a very reasonable explanation of this, as also that women have fewer facilities for bathing outside their huts.

It is surprising that the incidence of this disease is not greater, in view of the frequency with which snails and infected snails are encountered. It is probable that few of the *cercariæ* seen are those of *Schistosomum hæmatobium*, and that *cercariæ* are short-lived is an encouraging fact.

Many villagers have owned to having had symptoms of schistosomiasis in their childhood and early youth. Some of the latter undoubtedly mistake gonorrhœa for this disease, and, depending on their age, hide or divulge the fact. There is little doubt that many who have had schistosomiasis when young show no regular signs of it after the lapse of some eight or twelve years. Whether this spells an acquired immunity or the death of the worm and no re-infestation is difficult to say.

In regard to treatment, antimonium tartrate and mercurochrome have been used as before. The former has given better results.

2. *Ankylostomiasis.*—This disease has been found widely spread over the whole district. It is common to both sexes and has been slightly more evident among females than males. It is not often encountered in children under three years of age. It is not evenly distributed in the district. Percentages in various villages vary between 18 and 38, while in two it was as high as 57 and 62.

It has been observed that the incidence is lower in villages standing in the open slopes or plains than in those affording some shelter, as a clump of bush, trees, plantations or high grass, hollows, or low outcrops of rock, in close proximity.

Carbon tetrachloride and oil of chenopodium in capsule and liquid form have been dispensed on a large scale. Benefit has resulted, but is unlikely to last longer than a year because of the habits of the people, unless they follow advice given. At present there is little encouragement or indication that they are doing so. A few pit-latrines have been dug, as though to humour our enthusiasm, but these are not all in use.

3. *Filariasis.*—A census of people of the district whose blood showed the presence of *Microfilariæ* was taken. This as a matter of routine in the Kahama Clinic and as one of interest in representative portions of the district. Twenty per cent. of patients from all parts of the district showed these parasites, though admitted for other causes. In the villages the percentages ranged between two and seventeen. As was to be surmised, more cases were found in villages where sugar-cane and banana plantations were in the

vicinity. On the whole the percentage of people showing *Microfilariæ perstans* or *bancrofti* in their blood, without apparent ill-effect, is fifteen.

Antimonium tartrate and mercurochrome have been tried on some of these cases, without permanent beneficial results.

4. In yaws, bismuth arsanilate has been tried in two of our centres and has been favourably reported upon, except in one or two minor respects.

5. Bayer " 205 " has been used in relapsing fever in two or three Indian cases without benefit.

School.

The school at Zongomera is visited from time to time by the sister in charge of the Kahama Clinic. A tribal dresser posted at this village looks after the school sick and sends into Kahama those that he feels beyond his ability.

Motor Ambulances.

Two Albion ambulances have been in use in the district during the year. They have covered 3,787 miles all over the area and carried 47 patients to one or other of our centres.

Propaganda.

All inhabitants of the district are now aware of the existence, location and purpose of the clinics and welfare centres.

Propaganda has now taken the form of tutorial lectures in hygiene and the prevention of the more prevalent and important diseases to which the inhabitants are subject. The African District Sanitary Inspectors are enjoined to explain the elementary principles of sanitation and hygiene in their travels, and the native dispensers do likewise in theirs, as time and opportunity offers.

Their endeavours are supplemented and extended by magic lantern lectures. Every village of any importance in relation to population in the district has now seen the pictures shown and heard the lectures delivered. Notice is usually given a day or two ahead and the chiefs and sub-chiefs are requested to collect as large a gathering of their people as they can. The response to these appeals has been encouraging in point of numbers, though the effect of the lectures cannot be at present gauged. The practice followed hitherto has been to show a few slides of general interest first—the principal nationalities —and means of transport in civilised countries ; this allows time for late comers to settle down and become accustomed to the surroundings. The main subject of the lecture is then commenced and given as concisely, precisely and simply as possible so as not to be a strain on the mental faculties of our audience. This is followed by a few pictures of wild animals common to the African jungle. These they recognise without great difficulty and are interested in. The gathering disperse after this, but frequently asks that the pictures be shown over again. Chiefs and their followers at every gathering are asked which part of the programme appeals to them most, with a view to ascertaining their taste in art and lingering over it. Swayed by motives of diplomacy, some say the illustrations of the lecture ; others, more frank, acclaim the pictures with native women " featured." The children are loud in praise of the animal studies. Only one chief has made a concrete suggestion hitherto, and that was to introduce into the programme a few pictures of local interest. With this end in view, photographs have been taken of the chiefs in a group, local women and well-known scenes. These have been converted into lantern slides, and it is proposed to show these at the first opportunity after the wet weather.

Further, by way of propaganda, three Baby Shows were held in the district. The attendances at these were not as numerous as those in previous years, nor, considering the movements of people to new sultanates and the prevalence of sleeping sickness in the district, was this expected or desirable. People who would not be exposed to infection in their journey to the Baby Show were invited, and the numbers were thus limited.

The same observations as were made last year were made in this, and results were as follows :—

(1) *Baby Show at Ushirombo on* 22.10.29.

Total attendance (approximately)			300
Mothers			135
Children—			
Male	63		
Female	72		
			135
Children disqualified			116

	Snuffles.	Sore Eyes.	Vent. and Umb. Hernia.
Male	7	18	36
Female	8	21	41
Total	15	39	77

85·92 per cent. disqualified.
57·03 per cent. disqualified for hernia.
Sister B. G. Allardes judged the entrants.

(2) *Baby Show at Itaranganya on* 26.10.29.

Total attendance (approximately)			350
Mothers			121
Children—			
Male	63		
Female	58		
			121
Children disqualified			87

	Snuffles.	Sore Eyes.	Vent. and Umb. Hernia.
Male	6	4	42
Female	3	2	30
Total	9	6	72

71·9 per cent. disqualified.
51·12 per cent. disqualified for hernia.
Sister E. L. Kemsley judged the entrants.

(3) *Baby Show at Uyogo on* 28.10.29.

Total attendance (approximately)			350
Mothers			140
Children—			
Male	75		
Female	73		
			148
Children disqualified			83

	Snuffles.	Sore Eyes.	Vent. and Umb. Hernia.
Male	2	—	36
Female	3	4	38
Total	5	4	74

56·08 per cent. disqualified.
50·00 per cent. disqualified for hernia.
Sister C. Kemp judged the entrants.
N.B.—Some children had more than one cause for disqualification.

At the close of each show a short address was delivered to those foregathered on child welfare and its importance; and advice given as to how the health of the child might be achieved.

Meteorology.

Meteorological data for four of our clinics is made available in the following tables.

A slight seismic shock of half a minute's duration was experienced in June this year, in Kahama sultanate.

The prevailing winds in the district are from the south-east. A gentle breeze from the north-west commences every afternoon.

Tables of the meteorological observations in each of our stations for 1928 and 1929 are appended.

TABLE XIV.

Meteorological Return, 1929.

Kahama Clinic—Altitude, 4,000 feet (approximately).

Months.	Temperature.				Rainfall.			
	Shade maximum.	Shade minimum.	Range.	Mean.	Amount in inches.	Degree of Humidity.	No. of days on which rain fell.	Maximum fall in a day.
								inches.
January	83·97	63·87	20·10	73·92	4·42	62	7	1·18
February	87·08	62·42	24·66	74·75	1·93	64	6	0·71
March	84·28	62·83	21·45	73·55	7·02	73	13	2·50
April	83·04	62·57	20·47	72·80	9·54	71	14	2·50
May	86·64	62·04	24·60	74·34	0·15	59	1	0·15
June	85·85	59·50	26·35	72·67	—	62	—	—
July	84·40	59·72	24·68	72·06	0·03	58	1	0·03
August	86·17	60·49	25·68	73·33	0·28	52	2	0·23
September	89·75	63·00	26·75	76·37	—	44	—	—
October	87·94	65·33	22·61	76·63	2·55	43	5	1·64
November	84·05	64·04	20·01	74·04	5·78	67	13	1·80
December	80·87	62·74	18·13	71·80	6·80	70	16	1·56
	12/6·10	12/28·7						
Mean.	85·3	62·4			38·50			

Itaranganya Clinic—Altitude, 4,264 feet.

Months.	Temperature.				Rainfall.			
	Shade maximum.	Shade minimum.	Range.	Mean.	Amount in inches.	Degree of Humidity.	No. of days on which rain fell.	Maximum fall in a day.
								inches.
January	81·40	60·57	21·17	70·98	3·95	68	11	1·33
February	85·46	62·01	23·45	73·73	2·35	62	10	0·53
March	84·60	62·13	22·47	73·36	3·69	58	14	1·88
April	82·80	63·02	19·78	72·91	6·48	60	17	1·35
May	84·09	61·34	22·75	72·71	0·22	59	3	0·09
June	84·20	59·81	24·39	72·00	—	43	—	—
July	82·50	60·36	22·14	71·43	0·51	52	4	0·35
August	84·78	61·42	23·36	73·10	0·02	41	1	0·02
September	87·86	62·96	24·90	70·41	0·08	59	1	0·08
October	85·93	63·25	22·68	74·59	3·15	48	11	1·00
November	83·57	63·43	20·14	73·05	2.56	54	8	0·62
December	79·34	61·30	18·04	70·32	5·68	64	18	1·45
					28·69			

TABLE XIV.—METEOROLOGICAL RETURN, 1929—*continued.*

Uyogo Centre—Altitude, 3,936 feet.

Months.	Temperature.				Rainfall.			
	Shade maximum.	Shade minimum.	Range.	Mean.	Amount in inches.	Degree of Humidity.	No. of days on which rain fell.	Maximum fall in a day.
								inches.
January	84·84	62·27	22·57	73·55	5·62	48	10	2·14
February	86·42	61·83	24·59	74·12	6·60	52	12	1·57
March	83·40	61·58	21·82	72·49	3·93	68	15	1·12
April	82·60	61·70	20·90	72·15	4·86	62	13	1·12
May	86·58	59·00	27·58	72·79	—	49	—	—
June	86·31	57·03	29·28	71·67	0·05	45	1	0·05
July	84·20	59·77	24·43	71·98	0·13	51	1	0·13
August	86·61	60·09	26·52	74·35	0·07	50	1	0·07
September	90·33	62·83	27·50	76·58	—	54	—	—
October	89·32	63·54	25·78	76·43	2·13	55	6	0·98
November	84·58	62·83	21·75	73·70	5·55	78	15	1·02
December	80·82	59·09	21·73	69·95	7·34	79	18	1·25
					36·28			

Runzewe Clinic—Altitude, 3,936 feet.

Months.	Temperature.				Rainfall.			
	Shade maximum.	Shade minimum.	Range.	Mean.	Amount in inches.	Degree of Humidity.	No. of days on which rain fell.	Maximum fall in a day.
								inches.
January	84·25	59·90	24·35	72·07	5·14	80	8	1·15
February	84·71	57·82	26·89	71·26	4·05	73	9	1·30
March	77·90	59·74	18·16	68·82	6·89	77	17	1·29
April	81·50	61·23	20·17	71·36	7·37	79	15	1·30
May	84·19	56·87	27·32	70·53	0·70	73	3	0·56
June	75·10	52·48	22·62	63·79	—	66	—	—
July	83·74	52·60	31·14	68·17	0·47	59	1	0·47
August	85·66	55·79	29·87	70·72	0·05	61	1	0·05
September	Clinic closed.				24·67			
October								
November								
December								

ANNUAL REPORT OF THE GOVERNMENT DENTAL SURGEON FOR 1929 (MID-APRIL–DECEMBER).

This report covers the period mid-April, when the writer returned from leave, until the end of the year. Mr. Newton was on duty at Dar-es-Salaam during the writer's absence; the work performed by him during that period is shown in his Annual Report.

A summary of the actual work done is given below. In order to show how the work has increased, the returns for a like period in 1928 are shown alongside :—

	1929.	1928.
Attendances	2,052	1,280
Fillings	762	475
Extractions	555	251
Scalings	97	70
Root fillings	71	65
Dentures made	106	57
Repairs to dentures	77	66
Radiograms taken	240	120

In addition to these figures, a number of extractions have been done for the native population, and 130 fillings for the native school children ; regarding these fillings it is worthy of note that they were all permanent teeth which were filled, and that only five were interstitial cavities.

There are two dental officers on the staff, one at Tanga, the other at Dar-es-Salaam, but on account of leave and the Tanga Dental Officer's visits to Zanzibar, there is only one dental officer on duty in the Territory for considerable portions of the year.

The staff is quite inadequate to render efficient service ; since Mr. Newton's appointment in 1925 some hundreds of Europeans have been added to the staff ; the Asiatic staff has also been increased.

Mr. Anderburg was appointed as a dental mechanic and joined the staff in the middle of May. This appointment was made at considerable financial sacrifice to the writer, but this was agreed to in order that he could undertake more surgical work and give some much-needed attention to the native school children ; the returns show that this has been done.

Recommendations were again made during the year for the appointment of another dental officer, to ensure that the headquarters of every Province could be visited once in six months, the officials and their families receiving treatment on the spot, instead of having to disorganise their work by a long and expensive journey to the capital, for which the Government has to pay ; some £700 were so spent in the period under review. Surely this money could be better applied in acquiring the services of another dental officer, part of whose duties might well be the treatment of the native school children at the places visited.

As to the urgency and necessity of regular dental treatment, it cannot be better expressed than by quoting Sir William Willcox, than whom there is no one better qualified to speak on such a subject, who in a lecture on the " Systemic Effects of Oral Sepsis," given on behalf of the Dental Board, stated *inter alia :—*

" The consideration of the rôle of dental sepsis in relation to disease of other organs is one of the most important problems in medicine. It is certainly true that diseases of the periodontal tissues, by reason of the streptococcal infection arising therefrom, form one of the greatest sources of disease of adult life.

" There is no problem in medicine for which careful scientific investigation and well-balanced judgment are more required.

" If dental sepsis is present and no apparent harm is resulting, it does not follow that the condition may be disregarded. In such cases danger is always present.

" In the condition of ' apparent health ' there is an equilibrium between the protective power of the body and the toxic absorption ; should, however, the balance be upset by the occurrence of some other disease or some depressing influence, such as chill, injury, etc., then the presence of ' dental sepsis ' is almost sure to assert itself and cause disease. In other words, a condition of potential health, not apparent health, is to be aimed at.

" In my opinion, the so-called apical dental abscesses are the most serious lesions found in connection with dental sepsis, and it is these which give rise to the gravest general diseases resulting therefrom. If lesions of this kind are present the maintenance of health is obviously impossible ; some serious general disease is bound to result, if it has not already appeared.

" In cases of dental sepsis *the colon almost always* becomes infected with streptococci sooner or later.

" These secondary infections are usually progressive and may carry on the same toxic process, causing disease in other organs.

" It can be readily understood why a disease of dental origin—for example, arthritis —may progress when the primary focus of infection or even all the teeth have been removed. In many such cases the intestine is acting as the secondary toxic focus. The importance of early recognition of dental sepsis will therefore be appreciated. If a focal dental infection is allowed to remain, not only may a diseased condition arise in other

organs, but an intractable secondary intestinal infection may result which of itself may cause disease in other organs of a progressive character even if the original dental focus is removed.

"A careful consideration of the systemic effects of oral sepsis leads one irresistibly to the conclusion that a large amount of disease is directly due to it.

"This is to a great extent preventable, and it is an undoubted fact that a large amount of ill-health from which the nation suffers might be prevented were adequate attention paid to the care of the teeth.

"A rich reward will most certainly follow well-directed efforts in this direction, a reward which may be measured in terms of increased health, greater comfort and happiness, and in improved economic conditions."

Such are the accepted facts of dental neglect, which no Government can lightly pass over, and make no endeavour to alter, without impairing the efficiency of their officials and rendering their services of less value.

It is worthy of note that the official joining the staff to-day has generally had his mouth well looked after, and in accordance with the modern teaching has been in the habit of having his mouth examined every three months or so ; it seems unfortunate that this most excellent custom cannot be followed while they are in this Territory.

Great attention is being paid in this country to sanitation, welfare work, the treatment of sleeping sickness, yaws and other diseases, and it is surprising that so little attention is paid to the care of the teeth. A healthy body and a healthy mind depend to a great extent on a healthy mouth ; large sums of money are spent on the native population in improving their bodily health, and in developing their minds by education, but practically nothing is spent on the acquirement of that upon which they both depend.

Fourteen years' experience in this Territory has convinced the writer that oral sepsis n all its forms is extremely prevalent amongst the native population, and is sufficiently grave to demand some attention being paid to it. A statement of the treatment required by the Dar-es-Salaam native school children was given in the writer's Annual Report for 1928, and serves to emphasise this.

I am indebted to Dr. Williams for his help in giving the general anæsthetics to those patients requiring them, and for arranging beds in the hospital for patients requiring multiple extractions.

Dental Report for the Year 1929. By Mr. A. S. Newton, L.D.S. (Liv.), Dental Surgeon, Tanga.

The following is a summary of the work done for European officials, their wives and families during the year 1929 :—

Attendances	736
Root fillings	24
Fillings	287
Extractions	207
Scalings	35
Repairs	43
Dentures	25

The above figures do not include the work done—which is considerable—for the Asiatic subordinate staff, their wives and families, casual Swahili natives referred from the hospital, and native school children.

During the year 1929 the period 1st January to 17th April was spent in Dar-es-Salaam in the absence of Mr. H. M. Fisher.

The period 17th April to 10th August was spent in Zanzibar.

The remainder of the year was spent in Tanga.

(*b*) Interesting Cases, etc.

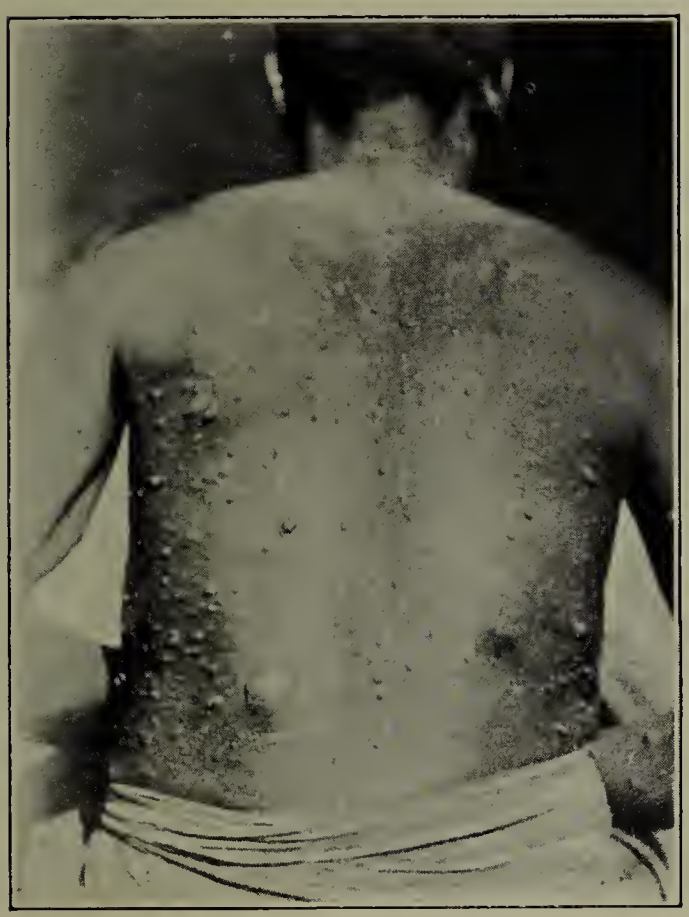
Several valuable papers by members of the medical staff, to which reference has also been made in the body of the report, have been included in this section, but perhaps Dr. Wilcocks' post-mortem findings (see page 204) deserve special mention.

Notes on Photographs of Neoplasms.

So much have neoplasms demanded attention, that it might not be without interest to include in this section photographs of examples occurring in African subjects.

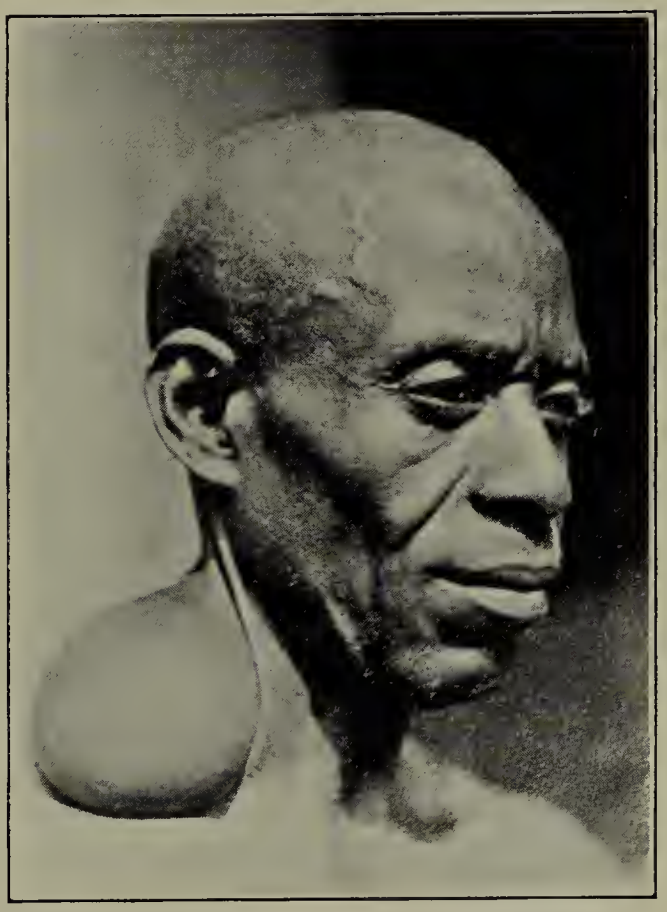
The photographs shown have accompanied reports from time to time, but have not been used hitherto.

Nos. 1, 2, 3 and 4 with notes by Dr. Edmond.



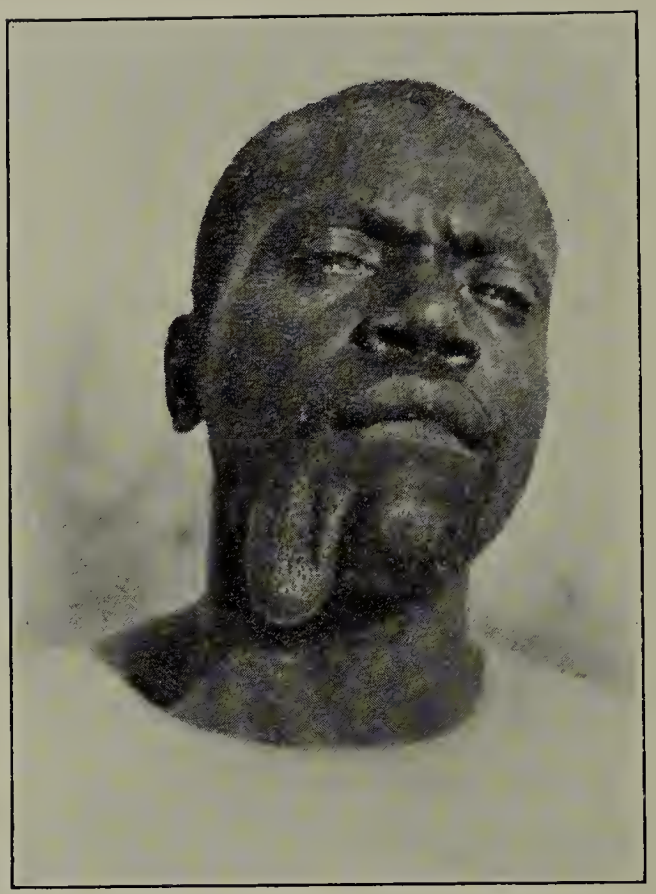
No. 1.

A diffuse papillomatous or cystic condition dating from infancy.



No. 2.

Pedunculated lipoma. The tumour had the pendulous appearance and consistence of a mammary gland.



No. 3.

A sacciform hypertrophy of the skin simulating a scrotum. The sac contained several loosely attached nodular bodies. The man stated that at birth the sac had been situated "on the top of the head."

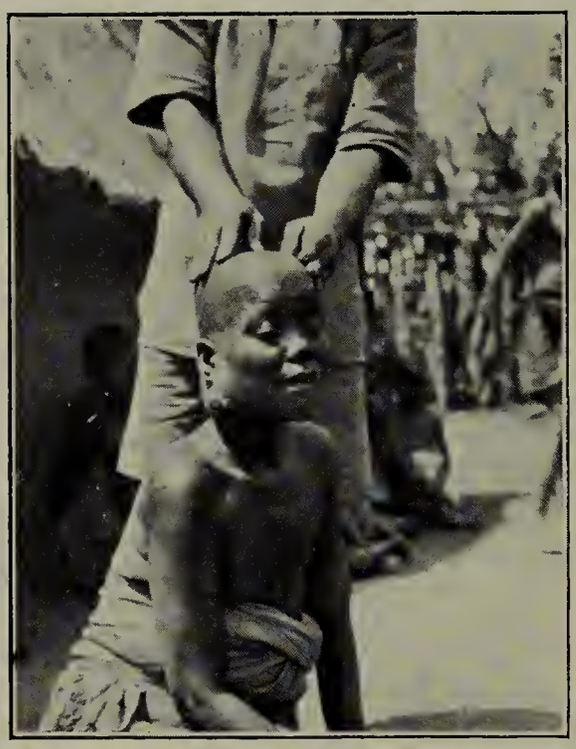
No. 4.

Non-filarial Pseudo-Mycetoma, following upon a wound, still unhealed, of the lower third of leg, sustained 14 years ago. History of syphilis.

No. 5.

No. 6.

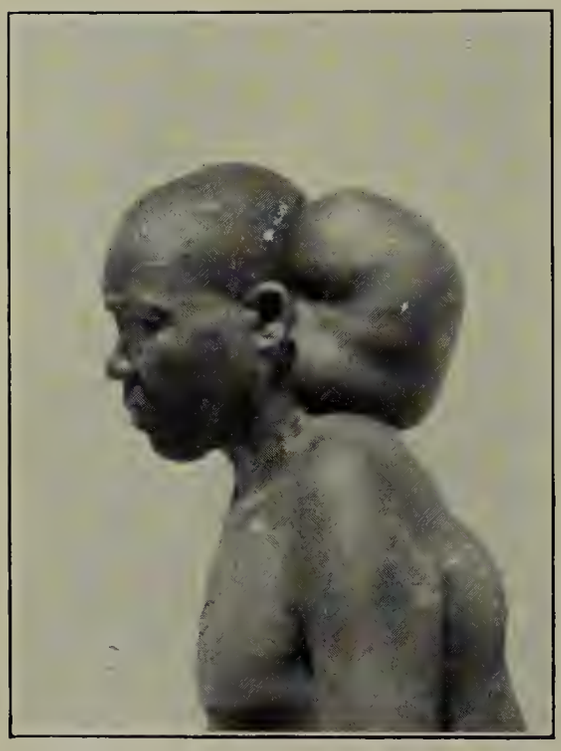
Osteo-sarcoma involving the temporal, frontal, sphenoid and upper maxillary bones, in a girl about 10 years old. The left eye was displaced, atrophied and perched on top of the growth.—(J.O.S.)



No. 7.

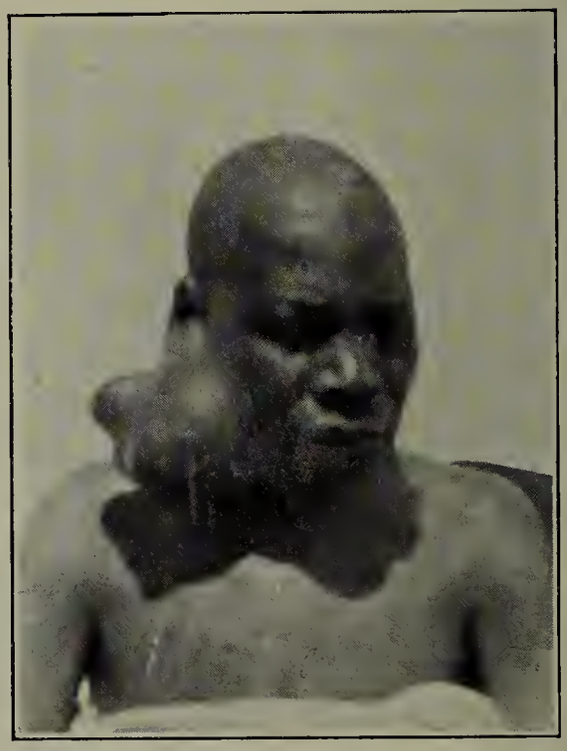
Malignant neoplasm of the neck. In this connection, *see* Dr. Speirs' note on page 193, which describes and illustrates the result of an amazing operation performed by an African medicine man on a similar case.

Photograph by Sub-Assistant Surgeon Kelkar.



No. 8.

Lipoma.



No. 9.

Hygroma. (J.O.S.)

Photographs taken by Dr. McNaughton.

The Action of Antimony Arsanilate on *T. Rhodesiense* in Man and *T. Congolense* in Oxen and a Dog.

Antimony arsanilate is a variable salt produced by a reaction between antimony potassium tartrate and sodium P. aminophenyl-arsinate. It is, according to Martindale, a salt which varies in its antimony and arsenic content dependent on the conditions in which the two salts are brought together.

The preparation used, in the cases tabulated, was found on analysis by Martindale to contain 26·4 per cent. of antimony and 11·5 per cent. of arsenic in chemical combination. Antimony arsanilate is an insoluble salt, and for purposes of intramuscular administration was put up in 2 grains in 1 c.c. olive oil. In all a total of 18 cases received intramuscular injection.

For purposes of observation the cases were divided into four groups: (*a*), (*b*), (*c*) and (*d*) :—

(*a*) Recent cases, without œdema.
(*b*) Early advanced, with some œdema, but able to get about freely.
(*c*) Late advanced, with œdema, but unable to get about without difficulty or help.
(*d*) Cases in the terminal stage.

It was necessary to begin with a small dosage, based on the animal experiments kindly conducted, at my request, by Dr. Burke-Gaffney (see page 195 of this report).

It will be observed from the table that a maximum dose of 10 grains was attained.

A severe local reaction occurred in every case, of which three sustained sterile abscesses, four suffered from diarrhœa, which could not, with certainty, be attributed to the antimony salt; none of the remainder exhibited any other noticeable adverse sign or symptom. The intensity of the local reaction was sufficient, however, to preclude repeated doses. With one exception (No. 5) the blood remained positive until the dose of the arsanilate was raised to 7 grains or over. Apart from the action of antimony arsanilate on the trypanosomes in the peripheral circulation, some of the cases are of interest in that a number were negative for lengthy periods after comparatively small doses of Bayer "205," given either by itself or consequent to the return of the trypanosomes after the administration of the arsanilate.

Cases Nos. 1, 11, 13, 16 and 17 fall into this category, of which No. 13 deserves special note.

The behaviour of Bayer otherwise maintained its usual course when given by itself.

At the end of the experiment all patients who were not still reserved for observation were placed on treatment with Bayer. All the Bayer injections were administered by Sub-Assistant Surgeon N. C. Daniel, who has rendered valuable services at Kahama in the treatment of sleeping sickness.

Sleeping Sickness Cases (*T. Rhodesiense*).

A.A. = Antimony Arsanilate.
B. = Bayer.
T.E. = Tartar Emetic.
T. = Tryparsamide.
– = negative.
+ = Not more than 2 Tryps in a fresh preparation.
++ = Several in whole fresh preparation.
+++ = Numerous.
++++ = 1 to a few in each field.
+++++ = 20 or more a field.
0 = No examination made.
$\frac{1}{6} \times 2$ Zeiss : $\frac{3}{4}$ = cover slip.
(*a*) Early case.
(*b*) Early advanced.
(*c*) Late advanced.
(*d*) In terminal state.
Numerals following sex symbol = age of patient.

1. Kuhegwa. (*a*)

♂ 50

15·7	A.A. 4 gr.	..	+	21·7	..	..	0	31·7	..	..	–	10·8	..	..	0
16·7	..	..	+	22·7	..	..	–	1·8	..	..	–	11·8	..	..	0
17·7	..	..	+	23·7	..	..	–	2·8	..	..	–	12·8	..	..	0
18·7	..	..	+	24·7	..	..	–	3·8	..	..	–	13·8	..	..	–
19·7	B. 0·5 gm.	..	+	25·7	..	..	–	4·8	..	..	–	14·8	..	..	0
20·7	..	..	–	26·7	..	..	–	5·8	..	..	–	15·8	..	..	0
				27·7	..	..	–	6·8	..	..	–	16·8	..	..	0
				28·7	..	..	–	7·8	..	..	–	17·8	..	..	0
				29·7	..	..	–	8·8	..	..	–	18·8	..	..	0
				30·7	..	..	–	9·8	..	..	0	19·8	..	..	–

Sleeping Sickness Cases—*continued.*

2. Kabika. (*c*)
♂ 25

15·7 A.A. 4 gr. .. ++
16·7 .. ..+++
17·7 .. .. +
18·7 .. .. ++
19·7 B. 0·5 gm. .. ++
20·7 B. 1 gm. .. +
21·7 0
22·7 .. .. –
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 B. 1 gm. .. ++
28·7 B. 0·3 gm. ++
29·7 T.E. 1½, T. 5 gm. .. ++
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 0
18·8 B. 1 gm. .. 0

3. Bundala. (*d*)
♂ 25
Cancrum Oris.

15·7 A.A. 3 gr. .. ++
16·7 .. .. +
17·7 .. .. +
18·7 died

4. Kiyombi. (*a*)
♂ 20

15·7 A.A. 3 gr. .. +
16·7 .. .. +
17·7 0
18·7 0
19·7 .. .. +
20·7 0
21·7 0
22·7 0
23·7 .. .. +
24·7 B. 1 gm. .. ++
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 B. 1 gm. .. +
5·8 0
6·8 .. .. –
7·8 0
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 0
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

5. Luphanda. (*a*)
♂ 40

15·7 A.A. 2½ gr. .. +
16·7 .. .. –
17·7 0
18·7 0
19·7 .. .. –
20·7 0
21·7 0
22·7 B. 0·3 gm. ++++
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 B. 1 gm. .. ++
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 0
6·8 .. .. –
7·8 0
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

6. Kiyenze. (*a*)
♂ 48

15·7 A.A. 3 gr. .. +
16·7 .. .. +
17·7 0
18·7 0
19·7 .. .. +
20·7 0
21·7 0
22·7 0
23·7 .. .. +
24·7 B. 1 gm. .. +
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 0
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

7. Wande. (*b*)
♀ 40

15·7 A.A. 3 gr. .. ++
16·7 .. .. +
17·7 0
18·7 0
19·7 .. .. +
20·7 0
21·7 0
22·7 0
23·7 .. .. +
24·7 B. 1 gm. .. +
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 B. 1 gm. .. –
1·8 died Hyperpyrexia

8. Tsana. (*c*)
♀ 50

15·7 A.A. 3 gr. .. ++
16·7 .. .. +
17·7 0
18·7 0
19·7 B. 0·5 gm. .. +
20·7 .. .. –
21·7 0
22·7 0
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 B. 1 gm. ..+++
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 B. 1 gm. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

9. Subi. (*d*)
♀ 55

15·7 A.A. 3 gr. .. ++
16·7 .. ..+++
17·7 A.A. 8 gr. ..+++
18·7 .. .. –
19·7 .. .. –
20·7 .. .. –
21·7 .. .. –
22·7 .. .. –
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 died Asthenia

10. Kayumbo. (*b*)
♂ 20

16·7 A.A. 6 gr. .. +
17·7 .. .. +
18·7 .. .. –
19·7 .. .. –
20·7 .. .. –
21·7 0
22·7 B. 0·3 gm. .. +
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 B. 1 gm. .. +
3·8 .. .. –
4·8 .. .. –
5·8 0
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0

Sleeping Sickness Cases—*continued.*

15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0
19·8 0

11. Malale. (*a*) ♂ 28

16·7 A.A. 6 gr. .. +
17·7 .. .. +
18·7 .. .. +
19·7 .. .. +
20·7 0
21·7 0
22·7 .. .. –
23·7 .. .. –
24·7 .. .. –
25·7 B. 0·5 gm. .. +
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

12. Nyaswa. (*c*) ♀ 40

16·7 .. ++++
17·7 A.A. 7 gr. ++++
18·7 .. .. –
19·7 .. .. –
20·7 .. .. –
21·7 .. .. –
22·7 .. .. –
23·7 .. .. –
24·7 .. .. –
25·7 B. 0·5 gm. .. +
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 B. 1 gm. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 0
18·8 0
19·8 .. .. –

13. Schiza. (*a*) ♂ 50

18·7 .. .. +
19·7 .. .. –
20·7 0
21·7 0
22·7 B. 0·3 gm. .. +
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 0
18·8 0
19·8 .. .. –

14. Tinginia. (*c*) ♂ 45

20·7 A.A. 9 gr. ++++
21·7 .. .. –
22·7 .. .. –
23·7 .. .. –
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 B. 0·3 gr. ..+++
29·7 B. 1 gm. ..+++
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0

12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

15. Nyamisi. (*a*) ♀ 45

23·7 A.A. 9 gr. .. +
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 B. 1 gm. .. +
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 0
18·8 0
19·8 .. .. –

16. Limi. (*b*) ♀ 30

23·7 A.A. 9 gr. .. ++
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 B. 0·3 gm. .. +
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

17. Mageni. (*b*) ♀ 30

23·7 A.A. 9 gr. .. +
24·7 .. .. –
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 B. 0·3 gm. .. +
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

18. Kama. (*c*) ♂ 45

23·7 A.A. 9 gr. ..+++
24·7 .. .. +
25·7 .. .. +
26·7 .. .. +
27·7 .. .. +
28·7 .. .. ++
29·7 T.E. 1½, T. 5 gm. .. ++
30·7 B. 1 gm. .. +
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

Sleeping Sickness Cases—*continued.*

19. Mayunga. (*b*)
♂ 20

27·7 B. 0·3 gm. .. ++
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 B. 1 gm. .. ++
7·8 .. .. +
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0

20. Kikhobola. (*a*)
♀ 18

27·7 B. 0·3 gm. .. ++
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 B. 1 gm. .. ++
7·8 B. 0·5 gm. .. +
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. +
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0
19·8 0

21. Nyamisi Ilale. (*a*)
♀ 55

27·7 B. 0·3 gm. ..+++
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 B. 1 gm. .. +
2·8 B. 0·5 gm. .. +
3·8 .. .. –
4·8 .. .. –
5·8 0
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 0
18·8 0
19·8 .. .. –

24. Musa. (*b*)
♂ 40

23·7 .. .. ++
24·7 B. 1 gm. .. ++
25·7 .. .. –
26·7 .. .. –
27·7 .. .. –
28·7 .. .. –
29·7 .. .. –
30·7 .. .. –
31·7 .. .. –
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 B. 1 gm. .. +
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0
18·8 0
19·8 0

25. Sabonyakha. (*b*)
♂ 50

31·7 B. 1 gm. .. ++
1·8 .. .. –
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 0
6·8 .. .. –
7·8 0
8·8 .. .. –
9·8 0
10·8 0
11·8 0
12·8 0
13·8 0

26. Gogo. (*c*)
♀ 50

1·8 B. 0·3 gm. +++++
2·8 B. 0·5 gm. +++
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0

27. Malugu. (*b*)
♂ 55

1·8 B. 1 gm. .. ++
2·8 .. .. –
3·8 .. .. –
4·8 .. .. –
5·8 0
6·8 .. .. –
7·8 0
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0

28. Myobe. (*d*)
♀ 60

23·7 1 gm. .. ++
30·7 1 gm. .. –
1·8 .. .. –
2·8 died

29. Mashanene. (*b*)
♂ 40

2·8 B. 0·5 gm. .. ++
3 8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. ++
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0

30. Kitula. (*b*)
♂ 40

2·8 B. 0·5 gm... +
3·8 .. .. –
4·8 .. .. –
5·8 .. .. –
6·8 .. .. –
7·8 .. .. –
8·8 .. .. –
9·8 .. .. –
10·8 0
11·8 0
12·8 0
13·8 .. .. –
14·8 0
15·8 0
16·8 0
17·8 B. 1 gm. .. 0

31. Kamunte bt. Masobe. (*b*)
♀ 43

31·7 .. .. –
1·8 .. .. +
2·8 B. 1 gm. .. ++
3·8 .. .. –
4·8 .. .. –
5·8 0
6·8 .. .. –
7·8 0

SLEEPING SICKNESS CASES—*continued.*

8·8	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	0

32. TSANA. (*b*)
♀ 40

2·8 B. 1 gm. ..	++
3·8	–
4·8	–
5·8	0
6·8	–
7·8	0
8·8	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	0
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

33. KAFUKO. (*c*)
♂ 65

2·8 B. 1 gm. ..	++
3·8	–
4·8	–
5·8	0
6·8	–
7·8	–
8·8 B. 1 gm. ..	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	–

34. KARANDI. (*b*)
♂ 30

3·8 B. 1 gm. ..	++
4·8	–
5·8	0
6·8	–
7·8	0
8·8	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	–

35. MOJA. (*d*)
♂ 14

5·8 B. 0·3 gm. ..	+++
6·8 B. 0·77 gm.	–
7·8	–
8·8	–
9·8	–
10·8	0
11·8 B. 1. gm.	
12·8 died	

36. MKWABI. (*c*)
♂ 18

6·8 B. 1 gm.	++++
7·8	–
8·8	–
9·8	–
10·8	0
11·8	0
12·8	0
13·8	–
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

37. MAHUNDO. (*a*)
♀ 30

6·8 B. 1 gm. ..	+
7·8	0
8·8	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	0
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

38. KISIKU. (*b*)
♂ 45

6·8 B. 1 gm. ..	++
7·8	0
8·8	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	0
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

39. BIMBIRI. (*c*)
♂ 11

7·8 B. 1 gm. ..	+
8·8	–
9·8	–
10·8	0
11·8	0
12·8	0
13·8	–
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

40. KAMUNDE. (*b*)
♀ 32

7·8 B. 1 gm. ..	+
8·8	–
9·8	0
10·8	0
11·8	0
12·8	0
13·8	0
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

41. MOHELU. (*c*)
♂ 50

8·8 ..	+++++
9·8 B. 1 gm.	+++++
10·8	0
11·8	0
12·8	0
13·8	0
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

42. MAKHULA. (*b*)
♂ 32

8·8	++
9·8 B. 1 gm. ..	++
10·8	0
11·8	0
12·8	0
13·8	–
14·8	0
15·8	0
16·8	0
17·8 B. 1 gm. ..	0

Animal Experiments.

Although the conduct of the experiment hardly merits mention, two oxen infected with *T. congolense* received two intramuscular infections each of 30 grains antimony arsanilate in oil. The trypanosomes disappeared from the blood for some time. The local reaction was negligible. No further details were recorded.

Besides the animals mentioned in Dr. Burke-Gaffney's paper, a dog infected with *T. congolense* was kept under treatment with antimony arsanilate for nine months in good condition, during which period there were several relapses. It was then apparently cured with an injection of Bayer, but was unfortunately killed by a motor car two months after.

Conclusions.

1. Antimony arsanilate, as prepared locally, is definitely trypanocidal in action for both *T. rhodesiense* and *T. congolense*.

2. Its general use, except in animals, is precluded by the incidence of a severe local reaction on intramuscular injection.

3. It might possibly be of service in the treatment of animal trypanosomiasis.

J.O.S.

Reports on (*a*) Typhoid and Paratyphoid Fever, (*b*) Two Fatal Cases of Tick Spirillum Fever, (*c*) Hepatic Abscess in a Native, and (*d*) Two Cases of Eosinophilia. By Dr. T. H. Suffern, M.B., B.Ch., B.A.O. (Roy. Univ., Irel.), Senior Medical Officer, Tabora.

(*a*) *Typhoid and Paratyphoid Fever.*

There was only one case of typhoid fever during the year. The case was a European woman, recently arrived from England, who probably got infected on board ship or at one of the ports. A friend of hers, a woman who travelled by the same ship, developed typhoid soon after landing in Kenya.

Our case was a very prolonged and severe one and had a relapse.

Typhoid vaccinations are done by the Sanitation Officer.

(*b*) *Two Fatal Cases of Tick Spirillum Fever.*

The mortality from tick fever is so negligible that the following two cases are worthy of note. Both were fulminant, uncomplicated attacks, and the bloods showed an unusually heavy infection of spirilla. The first was an Indian male, age 32 years, who was admitted to hospital on the afternoon of 27.2.29 with the history that fever began the day before. On admission the patient was very restless, with jactitation and mental clouding. Temperature, 104·8. Pulse 160 and weak. Blood showed a heavy infection of exceptionally long spirilla. At 3.30 p.m. he was given ·75 grm. neokharsivan intravenously. His condition became worse, and he died at 5.45 p.m. the same day.

The second was an Indian child, female, age 4½ years, who was brought to hospital on 11.11.29. The history was that she had an attack of fever eight days before, for which she received no treatment. The present attack began two days before. On admission the child was very ill. Temperature 103·8. Blood showed a heavy infection of spirilla at 2.30 p.m. She was given ·3 grms. kharsulphan subcutaneously. The patient gradually became worse, with difficult breathing, and died at 4.30 p.m. on the day of admission.

(*c*) *Hepatic Abscess in a Native.*

The following case shows how deceptive the temperature chart may be in the later stage of liver abscess. On 2.12.29 a middle-aged native male came to hospital with signs and symptoms strongly suggestive of liver abscess. He was admitted, with instructions that his temperature chart was to be kept with particular care. The temperature never rose above normal. Fifteen days after admission he began coughing up liver pus. The abscess was at once aspirated and over two pints of typical liver pus evacuated.

Unfortunately, the patient died two days later from pulmonary complications.

(*d*) *Eosinophilia.*

The following two cases, showing extremely high degrees of eosinophilia, are of interest.

The first was a healthy-looking Indian boy, age 12 years, who first reported on 24.4.29 with a mild attack of bronchitis. Urine was free from bilharzia eggs, stools not examined. His blood count was as follows :—

Polymorphs.	Lymphocytis.	Mononuclears.	Eosinophilis.	Masts.
25	19·41	7·64	46·17	1·76

Seen again on 11.12.29, when he looked and expressed himself as being quite fit, his count was as follows :—

Polymorphs.	Lymphocytis.	Mononuclears.	Eosinophilis.	Masts.
27·70	11·91	5·54	54·29	0·56

The second case is a native male, age about 24 years, still under treatment for rectal bilharzia (Mansoni), whose count is as follows :—

Polymorphs.	Lymphocytis.	Mononuclears.	Eosinophilis.	Masts.
13·77	24·24	4·96	56·21	0·82

Notes on Rare Cases of Disease.

By Dr. C. L. Ievers, L.R.C.P. & S. (Edin.), D.T.M. (Liv.), L.R.F.P. & S. (Glas.), Senior Medical Officer, Tanga.

At 11 a.m., 21st December, a Goan patient, primipara, was admitted to hospital in labour. Examination disclosed the fact that she had a double vagina. The two canals of equal size were situated laterally and were separated from each other by longitudinal septum, which was antero-posterior in direction. The septum was a quarter of an inch thick and contained muscular tissue; it was at its thickest below, but became a thin membrane above where it was attached to the left lateral fornix. Both the vaginal canals were patent, but the left contained no cervix. The septum was ligatured and divided under chloroform anæsthesia at 3 p.m., and the baby delivered by breech presentation at 6 p.m. Mother and child subsequently did well.

I may add that neither the patient nor her husband had any idea that she was abnormal.

Case of (?) Patent Urachus.

The patient, a male native, complained of swelling of the abdomen and leakage of fluid from the umbilicus. The swelling was due to ascites; the umbilical discharge was not, however, ascitic fluid (it did not solidify on boiling), but had the appearance of urine. Pressure on the abdomen above the umbilicus had no effect; pressure below and in an upward direction when the bladder was full produced a jet of fluid from the aperture. The opening was very minute, and with difficulty admitted the tip of a fine probe.

The abdomen was tapped and the ascitic fluid drained away. Unfortunately, the patient ran away before further investigations could be made.

Notes on (*a*) Sarcoma, (*b*) Burns, Hæmoglobinuria, and (*c*) A Case of Enteric Fever.

By Dr. A. S. Mackie, M.B., Ch.B. (Aberd.), Senior Medical Officer, Mwanza.

(*a*) *Sarcoma.*

The interest of this case lies in its rapid growth and in the extensive secondary involvement of the glands.

The patient, a male native, aged about 40, was admitted on the 9th September for a swelling in the neck of five months' duration.

On examination a hard mass, adherent to the skin and immovable, was found occupying practically the whole of the right side of the neck, with extensive infiltration of the soft palate and pharynx. There was a small mass on the right side of the neck. The supraclavicular glands on both sides, the axillary glands on both sides, and the inguinal glands on both sides were enlarged.

The liver and spleen were not enlarged. A gland was excised and forwarded for examination, but no report was received.

As the growth could not be removed, the patient was discharged.

(*b*) *Burns, Hæmoglobinuria.*

The patient, a male native, was admitted on the 1st October, with extensive burns of both lower and upper extremities and of the buttocks. The burns were due to scalding with steam.

On the 7th October the temperature rose to 102 and the urine that was passed on the afternoon of that day was bright red in colour. It contained neither albumin nor red blood cells.

The urine began to clear on the 9th, but the patient went progressively downhill and died on the 10th.

This was obviously a case of a toxic hæmoglobinuria supervening on extensive burns.

(*c*) *A Case of Enteric Fever.*

The patient, a male native, was admitted on the 4th December, complaining of fever.

Physical signs present were an enlarged liver and spleen, slight jaundice, increased vocal resonance with prolonged expiration over the upper part of the right lung.

Examination of the blood revealed the presence neither of malaria parasites nor of spirochætes.

A stool examination showed the presence of hookworm and *S. Mansoni* eggs.

As the temperature failed to react to treatment, the serum was taken and forwarded to the Laboratory, Dar-es-Salaam, for the agglutination test. The test was positive.

The temperature ran a remittent course and fell to normal by lysis 26 days after the patient's admission.

This is the first case of enteric I have seen in a native, but I believe cases of enteric are frequently admitted to the Native Hospital, Nairobi.

Notes on Interesting Cases of New Growths.

By Dr. W. H. Dye, M.R.C.S. (Eng.), L.R.C.P. (Lond.), L.D.S., R.C.S. (Eng.), D.T.M. & H. (Lond.), Medical Officer, Tukuyu.

Case No. 237/1929.

Male native of 40 years approximately, with marked spinal curvature. Presented a large fungating mass on anterior surface on his left leg, 9 ins. by 4 ins., raised about 1 in. above the normal tissues. Did not respond to specific or local treatment. It bled readily on section.

Laboratory Report on Section of Tissue.

The tumour shows masses of squamous epithelium arranged round a connective tissue core. Keratinisation, though imperfect, is marked, and young cell nest formation is evident. There are masses of cornified epidermis heaped up over the epithelial element. Some superficial hæmorrhages may be seen. The tumour is essentially papillomatous, but the embryonic character of the epithelial cell, and the extreme keratinisation, with the tendency to cell-nest formation, are suspicious of the presence of retrogressive changes, possibly in the direction of malignancy.

Unfortunately, normal tissue is absent from the specimen, so that infiltration, the essential criterion of malignancy, cannot be demonstrated.

Case No. 254/1929.

Male native of 35 years approximately, in good general condition. Presented a hard mass lying deep in the left buttock. On operation a large tumour with well-defined capsule was removed. The tumour was composed of large loculi, some of them thick-walled, others with thin transparent walls. The loculi contained a clear, sticky fluid.

Laboratory Report on Section of Tissue.

The tumour consists of connective tissue framework separated by branching processes enclosing clear spaces. The cellular element is small and consists of large stellate cells.

This resembles a myxoma, which is a rare condition in such a situation. This appearance may be simulated by œdema occurring in a fibroma, and may be indistinguishable from it. The microscopic appearances, however, taken with the history of gelatinous fluid, seem strongly in favour of a myxoma.

Case No. 276/1929.

Male native of 35 years approximately, well nourished and in good general condition. History of six months' duration.

The right leg and foot presented two types of lesions :—

(1) Large sessile growths, of various size, from half-inch to 3 inches in diameter chiefly on the anterior surface of the shin, and round the ankle joint. The tumours, which did not appear to be bound down to the deeper tissues of the leg, had a dry granular surface. Only in a few was the surface at all moist. A few gave the appearance of healing, which was borne out by the patient's statement. These were stated to be the earliest growths.

(2) On the dorsum and sides of the foot there were a very large number of small nodules with a central sinus. The sinuses were superficial, not leading down into the deeper tissues. A thin pus exuded from these sinuses.

The intervening skin of the foot was quite healthy, although, due to the large number of these lesions, there was comparatively little free surface. The foot showed no induration.

But for the lack of induration and the absence of deep sinuses, the condition resembled at first glance a Madura foot. The pus from the sinuses did not contain any mycotic elements. The case did not react to specific treatment.

Laboratory Report on Section on one of the Larger Tumours.

The specimen is an exceedingly interesting one in view of its close resemblance in many respects to Case No. 237 (see above), a case of a growth on the leg.

In addition to a similar overgrowth of epithelium, there is present a dense cellular infiltration at the base of the epithelial layer. This cellular element is a mixed one, consisting of polymorphonuclear leucocytes, lymphoid cells and plasma cells. There are, in addition, many giant cells, surrounded by the cellular arrangement typically associated with tubercle : an inner endothelial layer merging into an outer layer of plasma and lymphoid cells.

There is considerable fibrosis and dilatation of the smaller blood vessels.

Through the tissue, and at the bases of the epithelial processes, are circumscribed masses of polymorphonuclear leucocytes. These no doubt correspond with the pustular follicles referred to in your letter.

There appears to be little doubt that the condition is one of tubercular granuloma. The possibility arises of yaws and syphilis, but the predominant features of these conditions are not manifest, apart from the additional fact that the patient had received three injections of 914.

The general cellular structure is quite typical of tubercle as seen in other parts of the body. Tubercular disease of the skin is not very commonly encountered in temperate climates, and when present is usually confined to certain well-defined areas.

NOTE.—The patient was given a general anæsthetic and the large tumours removed by cutting them off flush with the skin, and the small nodules scraped and rubbed with Bipp.

Both types of lesions were completely healed over three months after, but at five months still remain as scars raised above the general surface of the limb. The scars are soft and flexible and show no signs of breaking down under the local treatment of massage with ung. hydrag. The patient remains in excellent health.

CASE NO. 302/1929.

Native woman of 30 years approximately. Good general condition. Admitted complaining of blood-stained discharge from the vagina, with much pain. History indefinite. Multipara.

The os uteri was found much thickened, irregular, hard and ulcerated.

Laboratory Report on Section of Tissue.

The tissue shows large masses of squamous epithelial cells of great irregularity both in size and nuclear configuration. There are some multinuclear cells, with large pale bodies and multiple mitotic figures. Nuclear fragmentation is marked in most of the cells. The stroma is highly cellular, consisting of polymorph leucocytes and a very large number of eosinophiles.

Normal tissue is absent, but the classical features of cervical carcinoma are otherwise well marked, and it is highly probable that such is the condition present.

CASE NO. 351/1929.

Native woman of 60 years approximately. Poor general condition. Exhibited a hard nodular enlargement of the left breast. The skin was unbroken, but in places

appeared fixed to the growth below. The breast was fixed to the chest wall, particularly in the upper quadrant. The left axillary glands were much enlarged, hard in part fixed to the surrounding tissues.

The history cannot be relied upon, but it was stated that it started in the upper quadrant ten months previously. The patient complained of much pain.

Owing to her advanced age and condition, a complete removal of the breast was not undertaken. A small portion was removed for section.

Laboratory Report on Section of Tissue.

This specimen is an undoubted carcinoma.

NOTE.—The patient was a woman of the practically unclothed local Nyakyusa tribe, living in a village among the hills of the Tukuyu plateau. Her diet would be the local one, it being highly improbable that she had ever had any European type of food. Her teeth showed extensive pyorrhœa, as is usual with these people, and many other African tribes.

I have to thank Dr. H. J. O. Burke-Gaffney for the full and elaborate notes on the laboratory findings of these cases.

NOTES ON TWELVE CASES OF TUBERCULOSIS. BY DR. W. H. DYE, M.R.C.S. (Eng.), L.R.C.P. (Lond.), L.D.S., R.C.S. (Eng.), D.T.M. & H. (Lond.), MEDICAL OFFICER, TUKUYU.

Twelve cases of pulmonary tuberculosis were recorded. This, however, appears to be a much more prevalent disease than the monthly returns indicate.

Dr. Fisher has done some most interesting work on this subject. He has toured the mountainous parts of the district and seen a number of cases of both pulmonary disease and disease of bones and joints.

In the Ukinga mountains he found that 3 per cent. of the infants, 35 per cent. of the children, and 75 per cent. of the adults gave a positive Von Pirquet reaction. As these people have never been in close contact with Europeans or Indians, and live in very small isolated communities, it would appear that the disease must have existed some considerable length of time. It appears even possible, prior to the European occupation. The fact that such a high percentage gives a positive reaction while in good general health would indicate a high resistance. A most interesting point.

From general observation the disease does not appear to be so common in the low-lands, but Dr. Fisher hopes in the immediate future to investigate this point.

In this connection it is obvious that much valuable work could be performed by a whole-time travelling research worker. I have been unable, due to press of general practice, to do any investigations myself, but Dr. Fisher has kindly kept me informed of his discoveries and given me permission to mention these figures and facts.

NOTES ON (*a*) THE TREATMENT OF HYDROCELE BY QUININE INJECTION AND (*b*) INVESTIGATIONS INTO THE MASS TREATMENT OF YAWS BY BISMUTH SALTS. BY DR. D. V. LATHAM, B.A., M.B., Ch.B., B.A.O. (Dub.), MEDICAL OFFICER, KILOSA.

(*a*) *The Treatment of Hydrocele by Quinine Injection.*

One case of hydrocele was treated by this method with satisfactory results. The hydrocele was tapped in the ordinary way, using a large bore serum needle instead of a trocar and cannula, when all the fluid had been evacuated, a sterilised solution of 20 grains of quinine bi-hydrochloride and 2 grains of salicylic acid in 10 c.c. of distilled water was introduced into the sack of the tunica through the needle, which was then withdrawn. The site of the puncture was then sealed. For about a fortnight the scrotal contents remained larger than normal, but without pain or discomfort. Thereafter absorption took place and the swelling disappeared, with no re-accumulation of fluid.

(*b*) *Investigations into the Mass Treatment of Yaws by Bismuth Salts.*

During the year two series of cases were treated in the district with a suspension of bismuth arsanilate in distilled water (Martindale).

The preparation consists of a fine white powder in a clear fluid sent out in pint bottles. When vigorously shaken for five minutes a milk-like suspension results, but it quickly falls out of suspension and clear supernatant fluid appears within 15 minutes on standing. This suspension will pass through a Down's stout serum needle, but it is very apt to block the lumen. The preparation was sterilised and ready for use.

In the first series 232 cases were treated and 468 injections given. The dosage was 3 c.c. for a robust adult, 2 c.c. for a poorly-developed adult, and ½ to 1 c.c. for a child. An attempt was made to give three injections at two-day intervals. This was only achieved in 61 cases ; the majority of the remainder had only two injections each.

In the second series 203 cases were treated and 299 injections given. The dosage in this series was 2 c.c. for a robust adult, 1½ c.c. for a poorly-developed adult, and ½ to 1 c.c. for a child. Two injections were aimed at at about seven-day intervals.

In the first series of cases the infiltration and swelling at the site of injection was considerable, with severe pain. Twenty-five per cent. of the cases with three injections developed stomatitis, but in no case was there abscess formation. In my opinion, these cases were over-dosed. In the second series most patients suffered a painful infiltration, which in some cases was still present, but resolving after 17 days. Only 5 per cent. of these cases developed a mild stomatitis.

It was found that the secondary eruption of yaws was cleared up by only one injection of the smaller dosage ; it is not claimed that a cure was effected, and in none of the cases was it possible to have a seriological control, nor were the cases followed up for a relapse, but the disappearance of symptoms was so marked, so rapid and so universal even after one injection that it is not unreasonable to feel that the infection had been overcome in the cases which had most treatment.

None of the preparations of bismuth is absorbed to any great extent by the skin or the alimentary tract, which leaves only the needle as a means of introducing the drug into the system. The intravenous route is at once the quickest and gives the most regular absorption, but the elimination is very rapid also and, furthermore, it is an exceptionally dangerous route, several deaths from its use have been reported. It has been given up in the treatment of syphilis, even by its original adherents. Subcutaneous injection of bismuth salts in general causes greater pain than intramuscular injection, with a slower and more irregular absorption, and it is much more prone to abscess formation. Intramuscular injection is the method of choice for introducing the drug.

The efficiency of any bismuth preparation depends on the quantity of metallic bismuth in the salt used and its slow but steady absorption. A constant sub-toxic concentration in the organism should be aimed at. Suspensions of insoluble bismuth preparations in oil have been shown by Lomholt (*B.M.J.*, 1929, pp. 887) and others to have a very slow and irregular absorption rate, as the oil may take weeks or even months to be absorbed, and hence their comparative painlessness, but with a watery suspension the water is absorbed almost at once and the particles of bismuth salt come into intimate contact with the muscle fibres. Unfortunately, the oily suspension absorbs too slowly to give the necessary concentration in the organism, and the watery suspension causes much pain owing to its comparatively rapid absorption. These facts were borne out in a case in which I gave three weekly injections of bismuth arsanilate in oil of equivalent dosage to the series of injections suspended in water. The patient had a typical secondary eruption. The injections were painless and caused little or no infiltration,* but the eruption remained uncured.

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* The length of time the patient was under observation was insufficient. The finding that secondary lesions are not cleared up by injections of bismuth arsanilate in oil is not supported by others. Reference should be made to Dr. Connell and Dr. Langan's " Note on the Treatment of Yaws with Bismuth Arsanilate," in the Tanganyika Territory Annual Medical Report for 1928, which demonstrates that the secondary eruption clears completely under treatment which, moreover, resulted in a negative Wasserman and Kahn 52 days after the last of six injections of 3 grains in 2 c.c. olive oil. —J.O.S.

The size of the particles of bismuth salt used would appear to be of some importance. If they are too small, then too large a bismuth surface is exposed at once and the absorption at first too rapid. I have not had an opportunity of studying the relative pain caused by suspensions of particles of different size, but the subject is worthy of investigation in the effort to obtain an equally efficient and less painful preparation. Lemholt, working with bismuth oxychloride, came to the conclusion that particles of 3 to 5 m. proved to be suitable. On the other hand, grossly large particles will cause a mechanical irritation, as they will not diffuse readily. The preparation used in these investigations had a very uneven size of particles, some being as much as 50 m. in diameter. I am inclined to think that smaller particles would be more satisfactory ; they would give a more even absorption and be more easily diffused in the muscle ; in addition, they would be less likely to block the needle.

The dose advocated on the bottle, namely, 3 c.c. for an adult, is too large ; 2 c.c. or even less is ample, and the time interval between the injections should not be less than seven days, otherwise a toxic saturation of the organism may result. Bismuth arsanilate given in these doses and at this interval is a very effective treatment for yaws, and is being carried out successfully at the Kilosa Hospital and at the Kimamba Dispensary by African dispensers. In my opinion, it is more effective than the soluble salt bismuth sodium tartrate and has the advantages of an insoluble suspension. The drawbacks of the preparation are not many, and I believe that it can be used throughout the Territory by African personnel without undue risk, provided its administration is properly taught.

Notes on the Technique used in the Treatment of a large number of Patients in their own villages.

Requirements.—20-c.c. syringe and 12 needles, steriliser and stove, forceps, iodine, cotton wool and lint, two enamel bowls 6-in. in diameter, one earthenware proctor of 1 oz.

Staff.—One injector and two assistants.

The needles, syringe and proctor are boiled. Freshly-boiled water is placed in the two bowls. Ten patients are brought in and suitably posed for injection. The first assistant precedes the injector with a bottle of iodine and stick with cotton wool wrapped round it and applies iodine to the buttock at the point indicated by the injector, the injector then inserts a needle and passes on to the next patient, and so on until all ten patients have needles in their buttocks. The second assistant has meanwhile been shaking the bottle of bismuth arsanilate suspension vigorously. The proctor is now filled with bismuth arsanilate and the 20-c.c. syringe filled therefrom, not through a needle, but directly through the nozzle. The injector then inspects all the needles to see if blood is flowing from any of them ; if it is, the offending needle is withdrawn and one of the two spare needles inserted at a slightly different spot in its stead.

The injections are then performed. The first assistant follows with a thick pad of cotton wool covered in lint and saturated with iodine in one hand, and one bowl of sterilised water in the other hand. Immediately after each injection the injector removes the needle and drops it into the bowl of water carried by the assistant, and if there is no bleeding the assistant gives the buttock a good hard rub with his iodine pad to diffuse the bismuth ; but, if bleeding occurs, he leaves the patient to be dealt with by the second assistant. In this way all ten patients receive injections. The injector then takes the bowl of needles and taking up sterilised water into his syringe from the bowl he washes through each needle in turn and drops it into the boiling steriliser. This is very necessary to prevent the needles from becoming blocked. In the meanwhile, the two assistants have ushered out the first ten patients and brought in the next ten, and the whole performance is repeated. In this way an experienced team can give 60 injections an hour. It is not found necessary to divide patients into age groups, except that children under eight years of age are treated individually ; nor with this technique was it found necessary to measure the bottle, only one ounce of bismuth arsanilate suspension being poured out into the proctor at a time, no wastage occurred.

With reference to finding the site for the injection, I instruct the injectors to imagine a line from the anterior superior spine of the ilium to the top of the crease between the buttocks, and to give the injection just half-way along this line. This gives approximately the same site as by the posterior superior iliac spine and upper border of the great trochanter of the femur method, but I find that some native injectors have difficulty in identifying these latter landmarks.

Treatment of Yaws and Syphilis with Halarsol. By Dr. C. R. Steel, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M. & H. (Lond.), Medical Officer, Kigoma.

Case I. Secondary yaws. Boy of 8 years.—This case had a well-marked deposit on both cheeks and elbows, behind the knees and on the calves.

22.10.29	.. ..	Wasserman reported contaminated. 0·012 grm. Halarsol.
25.10.29	.. ..	0·012 grm. Halarsol.
29.10.29	.. ..	0·025 grm. Halarsol.
1.11.29	.. ..	0·025 grm. Halarsol.
4.11.29	.. ..	Wasserman.+

On this date, 0·074 grm. having been given, the scabs were slightly drier, but still large and yellow. Treatment with halarsol was stopped, and bismuth arsanilate used instead on 4th and 8th November. On the 18th November all the scabs had fallen off and blood was taken for Wasserman test.

Case II. Secondary yaws. Male, aged 30 years.—This case had large deposits round the mouth, on the back of the head and neck, and on both thighs.

22.10.29	.. ..	Wasserman.+++ Khan.+++ 0·025 grm. Halarsol.
29.10.29	.. ..	0·025 grm. Halarsol. Lesions dry except for one-half dried.
1.11.29	.. ..	0·05 grm. Halarsol. Lesions dry except one on back of right shoulder quite wet.
8.11.29	.. ..	0·05 grm. Halarsol. Face lesions dry. One on back of right shoulder drying and dark in colour.
18.11.29	.. ..	Wasserman.++ Khan.++ The lesions had now relapsed and become moist. The condition was considered, in spite of 0·15 grm. Halarsol, to be not improved, and a change-over to B.S.T. was made.

Case III.—After one injection of halarsol, was not seen again.

Case IV.—Primary syphilis. Male, aged 35.—The patient had a typical penile hard chancre, of 14 days' duration, and enlargement of groin glands. The ulcer was dressed with black lotion and fomentation applied to the glands.

30.10.29	.. ..	Wasserman negative. 0·025 grm. Halarsol.
5.11.29	.. ..	Sore quite healed. 0·025 grm. Halarsol.
8.11.29	.. ..	0·05 grm. Halarsol.
11.11.29	.. ..	Buttocks painful, so no injection given.
14.11.29	.. ..	0·025 grm. Halarsol.
18.11.29	.. ..	Wasserman negative.

The patient received in all 0·125 grm., and the ulcer healed after 0·025 grm. only.

Case V. Primary syphilis. Female, aged 28 years.—The patient exhibited an indurated chancre of the labia, of doubtful duration.

5.11.29	.. ..	Wasserman.+++ 0·025 grm. Halarsol.
8.11.29	.. ..	0·05 grm. Halarsol. Sore healed.
14.11.29	.. ..	0·05 grm. Halarsol.
22.11.29	.. ..	Wasserman.++ Khan.+

This patient received a total of 0·125 grm., and the sore healed after 0·025 grm. only.

Case VI. Secondary yaws. Male, aged 35 years.—This case had large deposits on the face, especially below the nose, and on the chin they tended to become confluent. There was also a rash in the armpits.

19.11.29 ..	..	0·05 grm. Halarsol.
22.11.29 ..	..	0·05 grm. Halarsol. 23.11.29, the rash was beginning to dry.
26.11.29 ..	..	0·05 grm. Halarsol.
29.11.29 ..	..	0·05 grm. Halarsol.
3.12.29 ..	..	The rash had disappeared, the patient having had in all 0·2 grm. Wasserman tests failed owing to contamination.

Case VII. Secondary yaws. Male, aged 12.—This case had the face especially well covered with the rash.

3.12.29 ..	..	0·05 grm. Halarsol.
6.12.29 ..	..	0·05 grm. Halarsol 9.12.29, there was slight drying of lesions.
17.12.29 ..	..	0·05 grm. Halarsol. 19.12.29, a fresh yaw was found on the face.
24.12.29 ..	..	0·05 grm. Halarsol. The rash was improved, but only a few scabs have fallen off. The others are drying, but still markedly raised.

Notes on (*a*) the Treatment of Ulcers and (*b*) Aneurism of the First Part of the Axillary Artery. By Dr. J. Williamson, M.B., Ch.B. (Edin.), Medical Officer, Lushoto.

(*a*) *The Treatment of Ulcers.*

During the past two years many methods have been tried in the treatment of the large, chronic, sloughing ulcer, so common amongst the natives of many parts of East Africa. Several have been found to be efficacious, but the following method is now adopted from choice. The patient is placed on the table in the prone position. Although seldom necessary a whiff of chloroform may be an advantage if the patient is nervous. The leg and the ulcer are then cleaned up, and, using a 10 or 20 c.c. syringe, a 1 in 4,000 solution of potassium permanganate is injected under the ulcer from several points round its margin, and also into the floor of the ulcer at several points. The kind of dressing used subsequently does not seem to matter. We use a thin layer of boric ointment or B.I.P. spread on gauze or lint, as this protects the granulations. Dressings are renewed daily at about 12 noon, the patient being encouraged to walk about in the morning without a dressing, if the weather is fine. The advantages of this method are :—

(1) Immediate relief of pain.
(2) The rapidity of healing.
(3) Healing is permanent with a good thick elastic skin.

(*b*) *Aneurism of the First Part of the Axillary Artery.*

Hamisi bin Juma, admitted 10th November, 1929, complaining of pain and swelling just below the clavicle. The whole arm was more or less useless.

History : Two years ago was stabbed in the shoulder. Came to Lushoto for treatment. Got better, but has not been able to work since his injury. Swelling at the site of the old wound commenced soon after his discharge from hospital, and has slowly increased, as has the pain in the arm and shoulder. Is unable to sleep. On examination : Large swelling in the region of the left shoulder, just below the lateral two-thirds of the clavicle. There was an old scar in the middle of the swelling. Temperature 100° F. Pulse feeble on affected side.

A general anæsthetic was given and the swelling was carefully opened. Four ounces of pus were evacuated and then much clotted blood, and then a fountain of blood commenced to spout. The wound was enlarged and an opening, which easily admitted the tip of the forefinger, was found in the long axis of the axillary artery. The sac of the aneurism was as thin as tissue paper, and the actual sac was the muscles of the chest wall.

An attempt was made to suture or ligate the artery, but this was found to be impossible, because of the adhesions which had formed and the danger of including a cord of the brachial plexus in the ligature. The wound was plugged and the patient returned to

bed. Intravenous saline was administered frequently during the next few days. The patient made a good recovery, and on 21st November it was decided to ligate the third part of the subclavian artery. This was done. The patient made a good recovery and was discharged on 30th December, 1929, free from pain, with no loss of sensation and an arm the strength of which was almost completely returned.

NOTES ON THE POSSIBILITY OF HUMAN NON-PULMONARY TUBERCULOSIS OF BOVINE ORIGIN IN DODOMA DISTRICT. BY DR. J. W. GRAHAM, M.C., M.A., M.D., Ch.B. (Glas.), MEDICAL OFFICER, DODOMA.

During the present year there has been a marked increase in the number of patients admitted to this hospital suffering from non-pulmonary forms of tuberculosis. (1st January—30th November, 1929, 15. 1928, 2. 1927, 3, including 2 "disseminated.")

It is, in my opinion, difficult to state at present whether this represents an actual increase in the prevalence of non-pulmonary tuberculosis in the district. It may simply mean that the work done by the successive staffs over a period of years is bearing fruit and the Wagogo are bringing in their more serious cases.

With the idea that there may possibly be a considerable amount of non-pulmonary tuberculosis of bovine origin in the district, I have been in touch with the Veterinary Officer and have discussed the question with him.

(*a*) Up to the present, cases of tuberculosis in cattle in this Territory have been reported with extreme rarity, but it seems clear that the opportunities afforded for the detection of this disease as presented in routine abattoir inspection of carcases have been by no means exhaustive. The Veterinary Department does not appear to have considered that any extensive investigation, coupled with such tests as the tuberculin test, was indicated or justifiable, in view of the scanty evidence to hand of the occurrence of tuberculosis in cattle in the Territory.

(*b*) A high percentage of human non-pulmonary tuberculosis is of bovine origin, and it is conveyed largely through the consumption of raw infected cows' milk.

(*c*) The practice of feeding infants and children with raw cows' milk is general among the Wagogo.

(*d*) An increasing number of cases of human non-pulmonary tuberculosis is coming to light in this district.

I was hopeful of being able to carry these preliminary inquiries into practical effect in co-operation with the Veterinary Officer, Dodoma. My suggestion was the inspection of herds in parts of the district from which cases have come, and the carrying out of tuberculin or other reliable tests on these herds in sufficiently large numbers to make the results of some value. I am forwarding to you now these incomplete and preliminary records in view of my impending transfer and the probability that I will not have the opportunity of carrying the matter any further.

In conclusion, the increasing number of cases of non-pulmonary tuberculosis coming to light in this district, coupled with the ascertained customs of the local native with regard to the consumption of raw cows' milk, suggest the possibility of bovine origin, and the subject appears to be so important from both the medical and veterinary aspects as to warrant investigation.

Dodoma Hospital Returns, 1st January to 30th November, 1929.

Admissions for Tuberculosis (Natives):—		
Pulmonary		7
Non-Pulmonary		15
Bones and joints	5*	
Disseminated	2	
Intestines and peritoneum	5	
Lymphatic system	2	
Meninges	1	

* Including Potts' disease, 3.

Clinical and Pathological Report of Typical Cases (Summarised).

Case 1.—Kisiba bin Shoka, male Mgogo, aged about 40, admitted 26th April, 1929, complaining of swelling of the abdomen of about four months' duration, loss of strength and weight, and discomfort after meals. Clinically the main points were emaciation, anæmia, ascites, œdema of legs and ankles, presence of fluid in the pleural cavities, great enlargement of the spleen, moderate downward enlargement of the liver, with fine nodulation of the surface. No tubercle bacilli were found in the sputum. There was albuminuria. A differential count of the while cells showed 31 per cent. of lymphocytes and 67 per cent. of polymorphs.

Patient died on 6th May, 1929.

Necropsy showed 60 oz. dark brownish-coloured fluid in the peritoneal cavity (80 oz. had been removed by paracentesis on 30th April, 1929). These were generalised gross thickening of the entire peritoneum, so that on opening the abdomen the contents appeared as a mass knotted together by dense bands adherent everywhere to this thickened membrane. The great omentum could not be distinguished from the general mass, and the small and large intestines were so firmly involved that they could not be freed.

Liver.—The adhesions in the hepatic region were particularly dense, and the organ was removed with great difficulty. The surface was "hob-nailed," but the bosses were soft. Enlarged glands in portal fissure.

Spleen.—Separated with great difficulty. Weight, 33 oz. The lower pole contained a large wedge-shaped infarct.

Kidney.—Both kidneys were enlarged, there was interstitial fibrosis, and derangement of the pyramidal areas with marked congestion. Capsule stripped readily.

The Deputy Director of Laboratory Service reported on specimens from this case as follows :—

"The liver, spleen and lymph glands show an infiltration with small round cells, destruction of tissue, and—in the case of the liver—numerous small hæmorrhages. In all three, giant cells are numerous and well marked. The kidney shows cloudy swelling with numerous small hæmorrhages, and destruction of epithelium. The vessels are thickened. No pathological condition could be seen in the pancreas or brain. The 'boss' on the costal cartilage was similar in appearance to the lymph gland. The collective features of all organs seem to point to a diagnosis of miliary tuberculosis."

Case II.—Pagara, male child, aged 2 years, Mgogo, admitted 23rd May, 1929. The mother stated that for a period of about two months prior to admission, the child had suffered from severe diarrhœa.

A very feeble and emaciated child, with shrunken limbs and body, and a head which appears disproportionately large. A petulant, wailing little wreck.

There is a gangrenous condition of the upper gums in front, extending over the interval between the canine teeth. The gangrene has extended inwards to the maxilla, which is soft, infiltrated and carious. The gum margins on each side are red and swollen, and bleed freely.

There is great enlargement of the cervical glands on both sides, especially the left. The glands are matted and bunched together and are fixed.

The child's temperature was subnormal throughout, and response to treatment nil. Death took place on 4th June, 1929. A small portion of the cervical glandular mass was excised and sent to the Deputy Director of Laboratory Service, who reported upon it as follows :—

"The cervical gland sent by you on 4th June, 1929, shows a cellular infiltration of the round cell and epitheliod type, surrounding numerous giant cells. It appears to be a typical tubercular adenitis. It is interesting to examine the specimen in relation to the retroperitoneal gland of the last case."

Case III.—Potts' disease. Kimunda, male, aged 3 years, Mgogo, admitted 12th October, 1929. An emaciated and cachetic child. Severe scabies. In a neglected and filthy condition. Enlargement of the glandular systems generally, cervical, sub-maxillary, sub-lingual, axillary, inguinal. None felt in the abdomen. Marked kyphosis in mid-thoracic region, with soft, fluctuent swelling on each side of the deformity. Ran a remitting pyrexia of 100 to 101 while in hospital. Obviously moribund. After a few days in hospital the parents, seeing that it was going to die, insisted on taking it away.

Came from Handali, near Mvumi (Jumbe Tonya). (Note.—While passing through Saranda station on the Central line on safari a few days later, a second case of Potts' disease was seen. This was a native boy aged about 10. He had a very marked kyphosis in the lower thoracic region and appeared weak and emaciated, but was walking about. There was no opportunity to examine him.)

Case IV.—Tuberculous peritonitis with terminal meningitis. Jeremiah, male, Mgogo, aged about 20, admitted 6th August, 1929, from C.M.S., Bugiri, complaining of increasing weakness and swelling of the legs of five months' duration.

A weak and debilitated youth. Severe œdema of legs and ankles. Slight puffiness of face. Downward enlargement of liver, moderate enlargement of spleen, slight shifting dullness of flanks. Inguinal glands enlarged. No glands or masses felt in abdomen. Cardiac sounds weak. Chest normal. Ascaris and tænia ova in stool. Sputum, urine and blood slide examinations negative. No diarrhœa.

Patient ran a low-grade pyrexia throughout his stay in hospital. His condition varied, periods of improvement alternating with relapses, but the general trend was downwards. Towards the end he became mentally dull and drowsy, with periods of euphoria in which he expressed himself as perfectly well. The condition of the myocardium became steadily worse, and gallop rhythm was noted. He became comatose on 4th November, 1929, and died that evening. There was little alteration in the temperature chart during the fortnight preceding death.

At necropsy 20 oz. clear straw-coloured fluid was found in the peritoneal cavity. The peritoneum was soft and œdematous. There were numerous patches of transverse tuberculous ulceration in the small intestine. This was superficial and early. There were numerous enlarged glands in the mesentery ranging in size from a pea to an almond. The liver was greatly enlarged and presented an early amyloid appearance. The pancreas was larger than normal, and bound down with adhesions and had several enlarged glands attached to it, about the size of almonds. The kidneys were enlarged, the pyramids irregular and congested, there was early fibrosis and several pale areas scattered through the cortex in irregular fashion. The heart muscle was in a condition of brown atrophy. There was slight roughening of the endocardium of the mitral and tricuspid valves.

The lungs and pleuræ showed no evidence of tuberculosis.

The brain showed tuberculosis meningitis involving the stem and base, Sylvian fissures, which were glued with yellowish-white exudate, and vertex. Adhesions between the dura and pia-arachnoid, most marked on the vertex on each side of the middle line. Specimens of the tissues were sent to the D.D.L.S.

Case V.—Potts' disease. Mweza bin Zakaria, male, Mgogo, aged 3 years, admitted 21st November, 1929. The mother could not give any definite information as to when the illness began. The child had been seriously ill for about one month prior to admission.

On admission the child was extremely toxic and practically moribund. There was a very severe kyphosis in the upper thoracic region ; the third to fifth thoracic vertebræ appeared to be involved.

There was tuberculosis ulceration of the skin of the lower abdominal wall, penis, scrotum, perineum, and upper and inner aspects of the thighs. The ulceration was of a sloughing and penetrating character and secondary infection had taken place.

The child ran a hectic temperature while in hospital and died on 25th November, 1929. Post-mortem examination was refused.

The child came from Kungu, Sultan Mwanya.

INTERESTING CASES : (*a*) A CASE OF HODGKIN'S DISEASE, (*b*) A CASE OF DISSEMINATED SCLEROSIS IN AN AFRICAN NATIVE, (*c*) TWO CASES OF PARKINSONISM IN WARUSHA NATIVES, (*d*) REMOVAL OF A MALIGNANT TUMOUR OF THE NECK BY A NATIVE "MGANGA." BY DR. R. C. SPEIRS, M.B., Ch.B. (Edin.), MEDICAL OFFICER, ARUSHA.

(*a*) *A Case of Hodgkin's Disease.*

Female, Mwarusha, aged about 27 years. Admitted 21st July, 1929. Died 30th August, 1929.

Complaint.—Swelling on left side of neck behind the angle of the jaw and a swelling in the left groin. Breathlessness and pains in the chest.

Patient stated the swelling in the neck started about six months ago and had gradually increased in size ; the swelling in the groin started about three months previous to admission.

Examination.—Temperature, 101° F. ; very wasted.

There was a large glandular swelling on the left side of the neck, firm in consistence, with a lymphatic œdema of the overlying cellular tissue and skin. The swelling was about the size of a large orange, and there were minor glandular swellings of the right cervical and axillary glands and the left axillary glands.

The femoral and inguinal glands, particularly at the base of the femoral triangle on the left side, were in much the same condition as the cervical glands of that side. The whole leg showed some œdema, probably due to pressure on the femoral vessels.

There was considerable enlargement of the mesenteric glands, which could easily be palpated abdominally.

The blood showed a secondary anæmia, with poikilocytes and normoblasts.

The patient was treated on the usual lines with large doses of arsenic and neokharsivan, but despite treatment went rapidly downhill. The weakness and dyspnœa increased, the left leg became more and more œdematous, and she eventually became comatose and died 41 days after admission.

No post-mortem examination was performed.

It may be that lymphadenoma is a common disease in natives of East Africa, but this is the first case that has come to my notice.

(*b*) *A Case of Disseminated Sclerosis in an African Native.*

Native male, age 47, Mulundi. Admitted 25th September, 1929. Discharged 15th November, 1929.

Complaint.—Loss of power in legs and pain in back.

History.—States that two years ago he started to lose power in his legs ; this had become progressive until present stage was reached.

Examination.—Knee jerks and ankle jerks both sides exaggerated, ankle clonus present and sustained, knee clonus present but not well sustained, Babinski's sign positive both sides, intention tremour marked. Lateral nystagmus, speech unaffected, abdominal reflex lost, spastic gait.

Treatment with neokharsivan and pot. iodide appeared at first to improve the patient's condition, but the improvement was not progressive, and he was discharged at his own request.

(*c*) *Two Cases of Parkinsonism in Warusha Natives.*

The following cases of Parkinsonism may be of interest, following Dr. Shelton's description of a case in the *East African Medical Journal*, Vol. 5, No. 12, page 407, and Dr. H. L. Gordon's article in the same journal, Vol. 6, No. 5, page 122, with relation to epidemic encephalitis.

Case No. 1.—Mwarusha. Male, aged about 45 years. Admitted 26th January, 1929. Discharged 29th July, 1929.

History.—Patient was very vague about the commencement of his condition, but as far as one could make out it started about five years ago. Any details which he might have given regarding the commencement of his illness seemed to be completely overshadowed by his belief that the whole condition was due to an "internal gonorrhœa" he had contracted, following incest some ten years ago. (This explanation was given to him by a local medicine man whom he had consulted.)

Symptoms.—He showed all the symptoms of advanced Parkinsonism.

(*a*) *Tremour.*—Both hands and legs involved—typical pill-rolling movement of the hands, with constant flexion and extension of the fingers and the thumb.

The wrists and elbows also showed this continuous flexion and extension.

(*b*) *Rigidity.*—The face was expressionless. Attitude while standing, head bent forward and arms flexed at elbows, the knees slightly bent.

The gait was festinating and the knee jerks on both sides were slightly exaggerated.

Case No. 2.—Mwarusha. Male, age about 45 years.

Admitted with an ulcer of the leg. He did not come for treatment of his nervous condition.

History.—Attack of fever about four years before admission, after which the present nervous condition was noticed and became gradually progressive.

Symptoms.—A description of this man's symptoms would be a repetition of the symptoms of No. 1, except that the knee jerks in this case were normal and the whole condition was not so far advanced.

Both were typical cases and both were discharged in very much the same condition that they were admitted.

(*d*) *Removal of a Malignant Tumour of the Neck by a Native "Mganga."*

Mangura, Mwarusha, male.

Came to the out-patient department in September and requested that the tumour which he had on the side of his neck should be removed.

The tumour was about the size of a cocoanut and was situated behind the angle of the jaw. It was fixed to all the surrounding tissues and there was evidence of secondary growths in the supraclavicular glands, and at the sternal end of the clavicle. There was no ulceration, but the skin over the tumour showed signs of breaking down.

He was informed that it would be useless to attempt to remove the growth, as there was bound to be a recurrence—under the circumstances he refused admission.

Five days later he reappeared in hospital to our astonishment with the primary growth completely removed and a hole in his neck, which demonstrated in an extraordinary manner all the deeper structures of the neck.

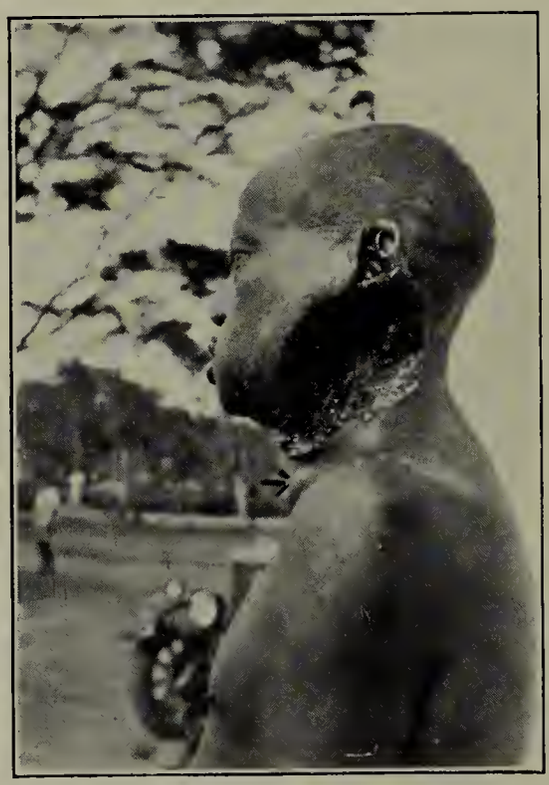
The photographs on page 194 show the condition of his neck on admission, and show that the individual who operated was not by any means ignorant of the anatomy of the neck.

He stayed in hospital eight weeks, and although the wound kept fairly clean and showed signs of healing, the secondary growths rapidly advanced in size and were starting to give pressure symptoms at the time of his discharge at his own request.

Photographs of a Native after an operation for Malignant Tumour of the Neck by an African medicine man.

No. 1.

No. 2.



No. 3.

Arrows show secondary growths.

The Therapeutic Effect of Antimony Arsanilate in the Treatment of Animals Infected with *Trypanosoma brucei*.

By Dr. H. J. O'D. Burke-Gaffney, M.B., B.Ch., B.A.O. (Dublin), Assistant Bacteriologist.

This experimental work was carried out in the Laboratory at the request of the Hon. the Director of Medical and Sanitary Services, who wished to estimate the value of antimony arsanilate in the treatment of human trypanosomiasis. The animal experiments were performed as a preliminary test, in order to ascertain the probable effects of such treatment in man.

Two strains of *Trypanosoma brucei* were obtained from the Veterinary Laboratory, Mpwapwa, through the courtesy of Mr. Hornby, Veterinary Pathologist. The original cases were two guinea-pigs, one of which had been infected with a virulent strain of *T. brucei*. The other animal carried a chronic strain of the trypanosome, and all efforts to re-infect other guinea-pigs were unsuccessful. Infection was, however, successful in the case of monkeys. Infection of monkeys with the virulent strain was carried out with ease. The guinea-pig in this case was acutely ill, and succumbed two days after arrival in Dar-es-Salaam.

The main purpose of the investigation was threefold :—

(1) To examine the sterilising effect of the drug on trypanosome-infected blood, and any clinical changes which it might involve.

(2) To estimate an appropriate dosage.

(3) To ascertain whether local or general toxic effects followed its administration.

Clinical Features.

(1) *Animals.*—For the main experiments, monkeys of the genus cercopithecus were used. This is the common local variety, easily obtainable and readily infected with *T. brucei*, without at the same time succumbing to the infection with undue rapidity. Unfortunately, their usage is accompanied by one serious disadvantage. During the cold weather these animals do not thrive in captivity, and fall a ready prey to intercurrent disease. An outbreak of pneumonia in the animal cages caused a severe interference with our experiments, and despite all efforts, such as cleaning, disinfecting and the erection of small, warm, individual cages, all the animals which had resisted the trypanosome infection eventually succumbed to pneumonia. The results of the treatment were thereby adversely affected, as many of the animals had been free from trypanosomes for long periods before developing pneumonia.

(2) *Weights.*—All the monkeys were weighed before inoculation, and thereafter weighed daily once treatment had been commenced. The weights had an important bearing in the estimation of dosage, but otherwise were not of great advantage. Control healthy monkeys were weighed each day throughout the course of the experiments, but it was found that the daily weight was so sensitive to slight adverse conditions that the procedure was of small value. The complete records of weights will not, therefore, be described, but the following general points may be of interest :—

Infection was usually preceded and followed by a slight decrease in weight.

After treatment, in favourable cases, the weights remained fairly constant.

In unfavourable cases there was usually a steady decrease in weight.

The animals which developed local reactions or intercurrent disease showed a varying decrease in weight in proportion to the severity of the conditions.

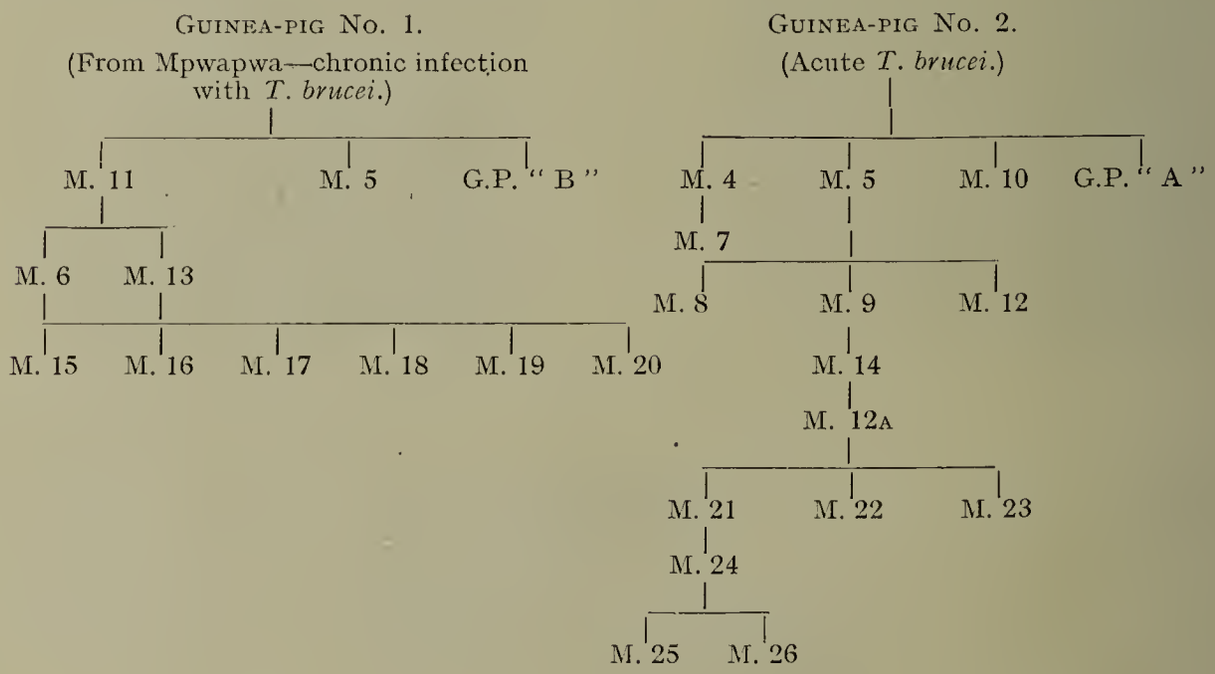
(3) *Temperature.*—Daily temperatures were taken in the case of the first ten monkeys. It was found that the temperature rose at the onset of infection, falling gradually as the infection became established. In treated cases the fall was more rapid and permanent, but a rise followed when relapses occurred. In intercurrent infections the temperature was variable.

(4) *Inoculation.*—The technique of infection was exceedingly simple and very reliable: 0·5 c.cs. of blood was taken from the ear of the infected animal in a 1 c.c. syringe. An aliquot portion of sterile saline was drawn up, and the whole injected into the required animal subcutaneously in the neighbourhood of Scarpa's triangle. The average incubation period was 4·5 days. Towards the end of the experiments the incubation period was lessened. This was due no doubt to the increased virulence of the strain, following repeated passage through the same species of animal.

(5) *Controls.*—Two control monkeys were infected, and not subjected to treatment. Trypanosomes persisted in their blood until death, which in each case occurred after three weeks.

One control animal was treated with soamin, one was given a minute dose of antimony arsanilate, and one was given a prophylactic dose before infection was established.

The course of the strains is shown in the following tables :—



Treatment.

(1) *Technique.*—The drug was suspended in olive oil. Three different batches were used, containing 1, 2 and 3 gr. per c.c. respectively. The injections were made intramuscularly in the flank, through a shaved area previously sterilised. The suspension was well shaken, the requisite amount injected, and the mass rubbed in by gentle massage for about ten minutes. The animal was then returned to the cage.

(2) *Dosage.*—Dosage was estimated roughly according to weight. Doses of 0·75 to 3·0 gr. were used. In only four cases were serious local effects observed, and these in small animals, with feeble muscles. In these cases the injections were probably partly subcutaneous.

(3) *Effects of Treatment.*—As has been noted already, intercurrent disease greatly diminished the length of the experiments. One-half of the monkeys were attacked by and died from pneumonia. Two suffered from head injuries. Even including these diseases, the average period of freedom in 21 monkeys following an average dose of 1·3 gr. was 13 days. Of the animals which died of pneumonia after treatment, one survived 53 days, one 46, one 37, and one 20.

A full statement is shown in the following table :—

Monkey No.	Weight in kilos.	Incubation Period in Days.	Dose in Grains.	Time between appearance of Tryps. and 1st Injection.	Time between 1st Injection and disappearance of Tryps.	Period of freedom from Tryps.	No. of relapses.	Further Treatment.	Result.	Greatest Period of freedom from Tryps.	Time of Death.	Post-mortem Changes.	Cause of Death.
					Hrs.	Days.				Days.			
4	4·0	5	1	7 days	6	12	—	—	Free from Tryps. until death	12	19th day	All organs congested, free fluid in pericardium	Acute *T. brucei* infection.
5	2·0	5	Control	—	—	—	—	—	Tryps. in blood until death	—	20th day	,, ,,	,, ,,
6	5·0	5	1	7 days	6	53	—	—	Free from Tryps. until death	53	60th day	Signs of pneumonia	Pneumonia.
7	4·0	2	2	5 days	6	41	—	—	,, ,,	41	46th day	,, ,,	,,
8	8·1	Prophylactic dose	3	6 days after inoculation	—	8	1	2 gr. 2nd day of relapse	,, ,,	8	20th day	Subdural hæmorrhage	Traumatic cerebral compression.
9	2·7	4	2	Same day	5½	19	1	,, ,,	,, ,,	19	22nd day	All organs congested	Acute *T. brucei*.
10	3·7	5	1½	7 days	6	37	1	1 gr. day of relapse	,, ,,	37	46th day	Signs of pneumonia	Pneumonia.
11	2·7	12	Control	—	—	—	—	—	Tryps. in blood until death	—	19th day	All organs congested	Acute *T. brucei*.
12	2·2	7	1	Same day	6	1	—	—	Free until death	1	Day after injection	Signs of pneumonia	Pneumonia.
13	2·2	7	1 gr. soamin	10 days	24	2	—	—	,, ,,	2	2nd day after injection	Congestion, all organs	Acute *T. brucei*.
14	1·0	9	1	10 days	6	—	—	—	,, ,,	—	Day of injection	,, ,,	,, ,,
						Hrs.							
15	1·0	4	1	3 days	5	24	—	—	,, ,,	1	,,	Depressed fracture ..	Cerebral compression.

Monkey No.	Weight in kilos.	Incubation Period in Days.	Dose in Grains.	Time between appearance of Tryps. and 1st Injection.	Time between 1st injection and disappearance of Tryps.	Period of freedom from Tryps.	No. of relapses.	Further Treatment.	Result.	Greatest Period of freedom from Tryps.	Time of Death.	Post-mortem Changes.	Cause of Death.
						Days.				Days.			
16	1·4	5	1½	Same day	5	16	1	1½ gr. day of relapse	Free until death	20	36th day	Signs of pneumonia	Pneumonia.
17	1·3	5	1½	,,	5	14	—	—	,, ,,	14	15th day	,, ,,	,,
18	2·3	5	2	,,	5	8	—	—	,, ,,	8	9th day	,, ,,	,,
19	2·2	5	2	,,	24	1	—	—	,, ,,	1	Day of injection	Cerebral vessels greatly dilated	Very heavy *T. brucei*.
20	2·8	Died of pneumonia before injection.											
21	2·0	5	0·75	Same day	5	9	1	—	Tryps. increased until death	9	21st day	Congestion, all organs	Very heavy *T. brucei*.
22	2·6	6	2	,,	5	16	—	—	Free until death	16	17th day	Signs of pneumonia	Pneumonia.
23	3·8	6	2	,,	6	20	—	—	,, ,,	20	20th day	,, ,,	,,
24	3·1	3	3	,,	6	3	—	—	,, ,,	3	3 days after injection	,, ,,	,,
25	2·0	4	Died the day of infection from pneumonia.										
26	3·1	Died before infection from pneumonia.											

(4) *Toxicity.*—Toxicity, as previously stated, was only manifest in four cases, and in one only was it more than a local effect. In three of the cases the reaction was transient, and cleared up under general measures.

(5) *Time of Sterilisation of Blood.*—Blood examinations were made every half-hour for the first few hours after injection. In all cases except one, blood findings were negative within six hours. In the single case referred to, the infection was exceptionally heavy, and trypanosomes persisted in the blood for 24 hours. It will be seen from the table that in the case of the monkey treated with soamin, the infection persisted for 24 hours.

A Case of Malignant Disease.

By Dr. A. McKenzie, M.B., B.S. (Lond.), D.T.M. & H. (Lond.), L.M.S.S.A., Medical Officer, Songea.

Mayaruka, African male, age about 40, admitted on 8th September, 1929. History of about one month's weakness and œdema of the face, feet and hands. Complained of pain and burning sensations in feet and hands.

Physical examination showed great anæmia (Hb under 40 per cent.), the œdema mentioned above and extremely hard glands. The stools were full of Ankylostome eggs and the obvious diagnosis was made. After carbon tetrachloride more than 50 *Necator americanus* were passed in the second stool (the first was thrown away by mistake).

A week later it was noticed that the œdema had not subsided and was taking on a peculiar "wooden" character. It would now not pit on pressure, though it was not elastic. The hands and feet as far as the wrists and ankles were mainly affected, and had become broad and spade-like, the nails being sunk in the swelling, and the whole finger looking like nothing so much as Pregnant Termite Queen. The skin was coarse and dry. All the lymph glands with one exception were very hard, though not noticeably enlarged. The exception was a large soft gland in the groin. This was aspirated and one of the epitroclear glands removed under a local anæsthetic, and sectioned.

Condition on 19th September, 1929, was :—

Heart and lungs normal. Pulse 70.

Liver and spleen not enlarged. Thyroid not enlarged.

Reflexes all normal and no anæsthesia.

Lymph glands all hard but discrete.

Fæces very suggestive of myxœdema, but hair growing well.

Urine normal.

Blood.

	Per cm.
White cells	7,000
	Per cent.
Polymorphs	60
Eosinophyls	3
Lymphocytes	35
Mononuclears	6
Basophils	1
Hæmoglobin	40

One normoblast was seen in the gland juice, otherwise nothing to note.

Blood pressure was 150 mm. systolic and 90 mm. diastolic. The gland removed showed on section, as far as I could judge, only an increase of the supporting elements, the lymphoid tissue remaining normal. (Hodgkin's disease was disproved.) About six weeks later he began to develop ulcers on the soles of the feet, somewhat resembling those of yaws. Scrapings were taken, but nothing found. Three full doses of N.A.B. caused no improvement. He now became rapidly weaker and very lethargic, and three days before death œdema of the ordinary type, *i.e.*, pitting on pressure and stretching the skin, appeared over the whole of both limbs and the back.

On several occasions during his stay in hospital the blood was examined during the night for filaria, but with negative findings. Signs of filariasis were looked for in the gland removed and in the juice aspirated, but nothing seen. His early treatment consisted of arsenic and iron, and when the plantar ulcers appeared, iodides were given and *B. lepra* looked for without result.

Throughout the disease the temperature was sub-normal, with an occasional spike of from 1–1½°.

Post-mortem report.—Much œdema legs, arms and back. Connective tissue inside and outside thorax has a yellow, mucoid appearance. A large amount of fluid (clear and straw-coloured) in chest and abdomen.

Heart small, but no abnormalities.

Great vessels healthy.

Lungs, hypostatic œdema at bases, otherwise no signs of disease.

Thyroid, pale and firm, not enlarged. Normal on section (macroscopic and microscopic).

Liver normal.

Kidneys small but normal.

Stomach normal.

Small intestine, many bright purpuric patches on the peritoneal surface. Each opposite a hard, rubberlike spherical lump projecting into lumen of bowel. Size varies up to ½ in. diameter. Colour, deep purple. Appears to spring from the submucous layer, but often attached to muscle. Mucous layer appears to be stretched over it and thinned.

Large intestine. A few nodules only seen.

Liver appeared quite normal. Section showed nothing strange. Spleen not unduly large for this country. Capsule thick and milky. Cut section rather pale, with very obvious fibrous bands running through it. Consistence quite firm, though not as hard as most spleens here. On each complete section about six to eight dark purple nodules similar in all respects to those in the intestine, much harder than the rest of the spleen and easily shelled out.

Suprarenals normal.

Peritoneum normal.

Lymph glands all hard, consisting of purple masses intersected by white fibrous tissue.

Microscopic sections were cut of spleen, liver, thyroid and lymph glands.

Intestine.—Nodule consists of a writhing mass of spindle and polygonal cells and a number of apparently wandering cells. Blood supply very generous and red cells fill all the spaces between the spindle cells. At the edge of the nodule large blood spaces are seen, bounded only by the spindle cells. No capsule to nodule, which invades muscular layer and muscularis mucosa. Mucosa does not appear to be broken. There is much round-celled infiltration of the mucous layer in the immediate region of the nodule.

Spleen.—Nodule appears to have a sort of capsule. Large blood spaces at the periphery. Structure identical with that of intestinal nodule.

Gland.—Islets of lymphoid tissue in a mass of typical tumour formation, which in places seems to be invading the lymphoid nodules. A greater proportion of polygonal cells.

The distribution of the growth appears similar to what might be expected of a lymphosarcoma, though the structure appears to be of the spindle-celled type, *i.e.*, it appears only in sites where there is normally lymphoid tissue and shows little tendency to form metastases.

Note.—No typical tumour tissue was seen in the gland removed during life when first examined. When deeper sections were cut after the post-mortem portions of the typical formation were seen.

Report by Dr. H. J. O'D. Burke-Gaffney, M.B., B.Ch., B.A.O. (Dublin), Assistant Bacteriologist, on the Morbid Material Obtained from the above Case.

(1) *Intestine.*—The intestinal nodules are made up of masses of spindle cells spreading inwards from the deeper layers. Hæmorrhages are numerous and there is some pigmentation. There are many ill-formed capillary vessels in which the endothelial layer is replaced by a single layer of spindle cells.

The mucosa appears to be intact, but is infiltrated with masses of small round cells. These appear to be of a lymphoid type, but are possibly spindle cells cut transversely.

(2) Closely similar appearances may be seen in the spleen and lymph gland. The neoplastic tissue is infiltrating the normal lymphoid tissue of both organs.

The distribution of the proliferating cells is typically that of a lymphosarcoma. This is the only type of sarcoma in which metastases in lymphoid tissue ordinarily occur. On the other hand, the cellular elements are undoubtedly of the spindle cell variety. Such a variety is uncommon in the intestinal tract and lymphatic system. The relation of the structure to the capillaries, and the marked hæmorrhage, are also more compatible with a fibroblastic type of growth. Although polymorphism in malignant tumours is not uncommon, I can find no record of a malignant growth in which the distribution is that of a lymphosarcoma, whilst the histology is that of a spindle-celled sarcoma.

There is an interesting and somewhat unusual condition described by Kaposi which both in its clinical and histological aspects closely corresponds with many of the features of the present case.

This condition is known as multiple hæmorrhagic sarcoma, and the following points have been taken from the description given by Ewing (" Neoplastic Diseases," 1922).

The condition exhibits a definite relationship to certain predisposing factors, of which local vascular lesions and œdema are mentioned. The prodromal stage is marked by local anæmia and œdema. Multiple nodules form on the hands, feet or elsewhere, and frequently ulcerate. In the stage of cachexia secondary nodules may appear in the intestinal tract.

Histologically there is dilatation of blood and lymphatic vessels and an infiltration with small round cells. Perivascular round and spindle cells appear, but later spindle cells predominate. Hæmorrhage and pigmentation are constant and frequent.

The disease is believed to be an infectious granuloma of unknown origin, which in its later stages and in predisposed subjects may take on genuine neoplastic properties.

There is much in common between this description and that of the Songea case. The relation between the early œdema with ulcerating nodules on the legs, and the final development of intestinal nodules of a spindle-celled structure, seems to be significant. I do not think that it is possible to make a diagnosis of lymphosarcoma, in view of the obvious spindle-celled morphology. For the reasons already given, it would not appear to be a true spindle-celled sarcoma.

I am therefore of the opinion that the condition is very probably one of multiple hæmorrhagic sarcoma.

NOTES ON A CASE OF FILARIASIS. BY DR. A. MCKENZIE, M.B., B.S. (Lond.), D.T.M. & H. (Lond.), L.M.S.S.A., MEDICAL OFFICER, SONGEA.

One curious manifestation of filarial disease was seen. A patient with two enormous swellings springing from the groins and reaching nearly to the knees. Apparently it had originated in the inguinal glands. The scrotum was normal and there were no signs of filariasis elsewhere. The left tumour was removed successfully, but the patient suddenly collapsed and died the day following the removal of the second tumour.

Filaria have been looked for in the blood stream at night, but have not been found. *F. perstans* has been seen in six patients.

NOTES ON BLACKWATER FEVER CASES. BY DR. J. HARKNESS, L.R.C.P., L.R.C.S. (Edin.), L.R.F.P. & S. (Glas.), L.D.S., R.C.S. (Edin.), D.T.M., D.T.H. (Liv.), MEDICAL OFFICER, BUKOBA.

In the Township of Bukoba, in the months from March to June, inclusive, there occurred several cases of blackwater fever. There were ten cases of much severity, the youngest patient being an Indian girl aged seven. Of the severe cases which terminated fatally, three were Indians and the other was an European.

In the majority of cases observed by me the condition had been present for 48 hours or more before I was given the opportunity of attending. Dense hæmoglobinuria was a feature common to all cases, with the exception of the girl, aged 7, whose illness was characterised by light hæmoglobinuria with 48 hourly remissions. Red blood corpuscles were scanty in all cases, and on standing, the urine showed much deposit. Jaundice, delirium, vomiting were marked in the ten cases, and a feature which impressed me was the duration of the hæmoglobinuria.

In all cases, with the exception previously mentioned, the stage of blackwater lasted for more than 72 hours. The incidence of malaria in the Indian population is high, but it is difficult to assign a cause for the blackwater. In one fatal case (Indian) the patient developed hæmoglobinuria during an attack of lobar pneumonia. The question of treatment is full of interest, but my limited experience forbids my discussing views.

Notes on (*a*) Cases of Acidosis in Malaria, as shown by the Presence of Acetone Bodies in the Urine, (*b*) Atresia of the Cervix Uteri, (*c*) Anencephalic Monster, (*d*) Teratoma of the Ovary, and (*e*) Ruptured Uterus. By Dr. C. Wilcocks, M.B., Ch.B. (Victoria), Medical Officer, Moshi.

(*a*) *Cases of Acidosis in Malaria, as shown by the Presence of Acetone Bodies in the Urine.*

(1) S. L., British female, aged 5. Blood M.P. positive, acetone bodies strongly positive in the urine. Gastro-enteritis. No history of bilious attacks. Died.

(2) D., British male, aged 13. Blood M.P. positive, acetone bodies positive in the urine. History of bilious attacks.

(3) E., Greek male, aged 5. Blood M.P. positive, acetone bodies positive in the urine. No history of bilious attacks.

(4) A., Norwegian male, aged 8. Blood M.P. strongly positive, acetone bodies positive in the urine. No history of bilious attacks.

(5) Mrs. McP., British, aged about 24. Blood M.P. strongly positive, acetone bodies positive in the urine. No history of bilious attacks.

(6) A. T. R., British male, aged 46. Blood M.P. positive, acetone bodies positive in the urine. No history of bilious attacks.

(7) Mrs. C., British, aged about 25. Blood M.P. positive, acetone bodies positive in the urine. No history of bilious attacks.

(*b*) *Atresia of the Cervix Uteri.*

Masai girl, about 16 years old, who had never menstruated. On examination the uterus was found to be the size of a four-months' pregnancy, and no cervix could be found. Thick chocolate-coloured fluid was aspirated from the uterus per vaginam, establishing the diagnosis.

The vaginal vault and the uterus were incised, the fluid drained away, and the edges of the incisions sutured in such a way as to form an artificial cervix. A tube was left in this cervix for a few days, and thereafter it was dilated daily for some time. The patient menstruated once and then left hospital.

There was no septic infection.

(*c*) *Anencephalic Monster.*

The patient was a Chagga woman in her third confinement, at Machame. The right foot and left knee were presenting. An anæsthetic was given and the fœtus extracted, and was found to be an anencephalic monster, with a formed face, thick ears, and a large meningocele occupying the place where the occiput should have been. There was practically no neck, and no other abnormalities were found. The association of deformity with malpresentation is well illustrated in this case.

(*d*) *Teratoma of the Ovary.*

The patient was a Chagga woman with a history of abdominal pain for a few days, and a large mass palpable in the pouch of Douglas and visible above the symphysis pubis. The abdomen was opened and the tumour found to be ovarian and pediculated. The pedicle was twisted through an angle of 360 degrees, and was therefore strangulated. It was removed and was found to contain black altered blood, fatty sebaceous fluid, cartilage, one piece of bone, and black hairs.

Recovery was complete.

(*e*) *Ruptured Uterus.*

The patient was a Chagga woman in her fifth labour. She was brought into hospital from Machame by Miss Neale, with a history of labour lasting for 50 hours and no advance. A mass could be felt in the abdomen separate from the main mass of the fœtus, and was diagnosed as probably the head of a second child.

The head was in a posterior position, and forceps were applied. As there was no difficulty in the extraction the head was drawn out in this position. Manual exploration for the placenta revealed the fact that it was lying among the intestines behind the well-contracted uterus, and there was a tear in the cervix and posterior vaginal fornix wide enough to admit the entire hand. Abdominal hysterectomy was performed and the vagina sutured. Tube drainage was employed for a few days, but was unnecessary. Recovery was perfect. There was no septic infection in spite of the fact that the large intestine had at one time presented at the vulva. The child was, of course, dead.

Notes on Post-mortem Examinations Performed by Dr. C. Wilcocks, M.B., Ch.B. (Victoria), Medical Officer, Moshi.

From this series of 53 examinations certain facts of interest emerge. Taking the various organs in order, the findings may be classified as follows :—

Heart.—Nodules of a fibrous nature were found on the mitral valve in 35 instances, on the tricuspid valve in 13 instances, and on the aortic valve in 7 instances. These nodules were both visible and palpable, and were usually present near the free border of the valve. It is most improbable that they are of any pathological importance, but they did not correspond with the usual idea of a normal valve.

Sclerosis was observed in the mitral valve in 4 instances, in the aortic valve in 2 instances, and this valve was perforated in 2 instances, the valve being in both cases perfectly normal in other respects. The sclerosis observed was in no case extensive ; usually it was a mere thickening and rigidity of the valve curtain.

The intima of the first part of the thoracic aorta was covered with raised yellow patches or streaks in 22 instances, but no ulceration was discovered. The patches were usually the size of a threepenny piece, few were as large as a sixpence, and were circular or oval. It would be too much to dignify these by the name of atheroma, but at the same time they were distinctly abnormal.

Lungs.—Adhesions of obviously old origin were found in 15 instances in the right pleural cavity, and in 18 in the left. These were probably mostly due to old pneumonia, as in these instances evidence of tuberculosis could not be found except where mentioned.

Lobar pneumonia attacked the lobes in the following order :—Upper, 6 ; lower, 4 ; middle, 1 ; whole lung, 1. The one case of broncho-pneumonia attacked the upper lobe.

The *spleen* was enlarged in 23 instances.

The *kidneys* showed congestion in the majority of the febrile cases. Acute nephritis was present in 1 case, chronic parenchymatous nephritis (hydræmic) in 4 instances, and chronic interstitial nephritis (azotæmic) in 2. Fœtal lobulation was observed in the new-born child.

The *stomach* showed the only case of malignant disease observed.

The average length of the *appendices* measured was 3·6 inches.

Worms were not looked for ; a separate estimate of these is given in another part of this report.

Tuberculosis.—The findings have been of exceptional interest. Tuberculosis causing death, 7 cases, as under :—

No. 22, caseating nodule lung apex, miliary.
No. 26, cavity lung apex.
No. 37, cavity lung apex, miliary.
No. 49, cavity lung apex, miliary.
No. 52, cavities lung apex, ulcers in small intestine.
No. 25, meningitis.
No. 48, peritonitis.

The incidence of miliary infection is heavy. Tuberculosis present but not causing death :—

No. 10, cavity lung apex, chronic nephritis.

No. 18, scars lung apex, lobar pneumonia.

No. 20, calcareous nodule, lung apex, lower lobe of C.S.F.

No. 47, cavity lung apex, chronic nephritis.

The interest lies not only in the number of cases, but also, and more strikingly, in the undoubted evidence of chronicity and protective reaction shown by these last four cases, especially numbers 18 and 20.

The following is a list of the causes of death :—

Indefinite	5
Cerebral tumour	1
Abdominal tumour (myxoma)	1
Malignant disease, stomach	1
Nephritis, acute	1
,, chronic	3
Pneumonia, lobar	7
,, broncho-	1
Cerebro-spinal meningitis	3
Typhoid	2
Anthrax	1
Tuberculosis, various forms	7
Pulmonary abscess	1
Cerebral malaria	1
Blackwater fever	1
Perforated dysenteric ulcer	1
Enteritis	3
Melæna neonatorum	1
Stillborn	1
Hookworm and anæmia	3
Leukæmia	1
Murder and accident, etc.	7
TOTAL	53

The cases were not selected.

My thanks are due to the Sub-Assistant Surgeons D. A. Purandare and D. S. Mahabal for their help in this work, and their keenness over the whole period, and also to my head dresser Anael.

No.	Tribe.	Sex.	Age.	Diagnosis.	Heart.	Lungs.	Spleen.	Kidneys.	Liver.	Brain.	Intestine.	Appendix.	Lymphatic.	Remarks.
1	?	Male ..	18	Parkinsonism	—	Slight effusion R. side	—	—	—	Negative ..	—	—	—	Pons and medulla microscoped negative.
2	?	Male ..	30	Cerebral tumour	—	—	—	—	—	Tumour R. side near internal capsule	—	—	—	Probably gumma.
3	Mnyamwezi	Male ..	Adult	Jaundice, uræmia	Mitral nodules	—	—	Both granular with scars	—	—	—	—	—	Chronic nephritis, uræmia.
4	Mchagga ..	Male ..	Adult	Arrow wound	Aortic patches	—	—	—	—	—	—	—	—	Probably poisoned arrow.
5	Mchagga ..	Male ..	Adult	Lobar pneumonia	—	L. upper lobe grey hepat. Recent adhesions	Very large ..	—	Large ..	—	—	—	—	—
6	Mnyamwezi	Male ..	Adult	?	Mitral nodules	Adhesions R. upper lobe	Large ..	—	—	Negative ..	—	—	—	Symptoms pointed to cerebral lesion.
7	Mchagga ..	Male ..	Adult	Blackwater fever	—	—	Very large. Hæmorrhages on surface	Both large and congested	—	—	—	—	—	Urine typical, anæmia marked.
8	Mnyamwezi	Male ..	Adult	Lobar pneumonia	Mitral nodules, muscle flabby	R. middle and lower lobes in grey hepatisation. Recent pleurisy	Very large ..	—	—	—	—	—	—	—
9	Mnyamwezi	Male ..	Adult	Lobar pneumonia	—	R. upper lobe in grey hepat. Pleurisy R. base	Large ..	—	—	—	—	—	—	—
10	Mnyamwezi	Male ..	Adult	Chronic nephritis	Mitral nodules, muscle thick	Adhesions both. Cavity at apex of R. lung. T.B. Pus in pleural cavity	—	Both mottled and thick pale cortices, with cysts	Fibrous ..	—	Chronic plastic peritonitis and ascites	—	—	Chronic hydræmic nephritis. Lung smear negative for T.B.
11	Mchagga ..	Male ..	40	? Malignant liver	Mitral rigidity. Old pericarditis	Emphysema both apices	—	Early granular kidneys	Large white malignant masses throughout	—	Carcinoma stomach	—	Large glands in hilum of liver, stomach, mesentery, etc.	Huge mass of carcinoma surrounding pylorus and extending up the lesser curvature. Hour-glass contraction.
12	Mnyamwezi	Male ..	Adult	C.S.M. ..	Mitral nodules	Old adhesions L. pleura, especially basal. Emphysema both apices	Large ..	—	—	Thick pus on surface, especially R. side	—	—	—	Gram negative, diplococci.
13	Abyssinian	Male ..	Adult	Murder ..	Mitral valve thickened. Aortic patches	Emphysema both apices	Very large ..	—	—	—	—	—	—	Stabbed through lung and into spleen.
14	Mpare ..	Male ..	10	Accident. Peritonitis	—	—	—	—	—	—	Purulent peritonitis. Stomach perforated	—	—	Arrow wound in abdomen.

15	Mnyam-wezi	Male ..	20	Enteritis ..	Some aortic patches	Old adhesions L. pleura, basal. Some emphysema R. lung	Large ..	—	—	—	Nothing definite	2″	—	Diarrhœa, great emaciation.
16	Mchagga ..	Male ..	40	Hookworm	Mitral nodules. Aortic patches	Emphysema both	Large ..	—	—	—	—	—	—	Very little fat. Ova found in fæces in large numbers.
17	Mpare ..	Male ..	Adult	Anæmia ..	Mitral nodules	Old adhesions L. base	Very large. Perisplenitis, fibrous	Typical large white kidney (L.)	Very large. Chronic perihepatitis	—	—	—	Mesenteric and aortic very large	Leukæmia.
18	Mnyam-wezi	Male ..	Adult	Lobar pneumonia	Mitral nodules large. Aortic patches. Hypertrophy	Red hepat., L. lower; grey hepat., R. lower. Definite T.B. scars R. apex (healed)	Large ..	—	—	—	—	4″	—	—
19	Mbukwe ..	Male ..	Adult	Malaria ..	Mitral nodules. Aortic patches. Hæmorrhages near L. auricle	Emphysema apices	—	—	—	? Chronic lepto-meningitis	—	4″	—	Cause of death not found, other than malaria.
20	Mchagga ..	Male ..	Adult	C.S.M. ..	Acute fibrinous pericarditis. Mitral nodules. Aortic patches	Emphysema R. apex. Calcareous nodule apex lower lobe. Adhesions L. root	Large ..	Intensely congested	—	Covered with pus	—	3″	—	Gram negative, diplococci.
21	Mchagga ..	Male ..	Adult	Peritonitis, acute	Mitral and tricuspid nodules	Apical emphysema. Adhesions R. base to diaphragm	Slightly large	Definitely congested	—	—	Perforated dysenteric ulcer in sigmoid	—	—	Two pints foul pus in abdomen.
22	Mchagga ..	Male ..	Adult	?	Mitral sclerosis	Recent adhesions R. lung. Miliary T.B. in whole of both lungs. Caseating nodule apex R. lower lobe	Miliary T.B. throughout	Both large and congested. A few miliary T.B.	—	Miliary T.B. in meninges of left hemisphere. Green pus (gelatinous) in circle of Willis	—	3″	—	No physical signs in chest. C.S.F. clear, no coagulum. Peritoneum normal.
23	Mrangi ..	Male ..	50	?	Mitral nodules marked. Aortic patches. Aortic and pulmonary dilatation	L. lower lobe abscess surrounded by solid lung. Not like T.B. Emphysema upper lobes	Very soft ..	Congested cysts on surface	—	—	—	—	—	Pneumococci only in lung pus.
24	Mchagga ..	Female	10	Accident ..	Mitral nodules	Adhesions R. apex and ? scar	Ruptured. One fragment separated. Not enlarged	—	—	Fissured fracture L. temporal bone. Extra-dural hæmorrhage	—	—	—	—

No.	Tribe.	Sex.	Age.	Diagnosis.	Heart.	Lungs.	Spleen.	Kidneys.	Liver.	Brain.	Intestine.	Appendix.	Lymphatic.	Remarks.
25	Mchagga ..	Male ..	10	T.B. meningitis	Mitral nodules slight	—	—	Very congested	—	Nodules on pia-arachnoid along the superior longitudinal sinus. Greenish gelatinous substance near chiasma. Lateral and third ventricles very distended with clear fluid	—	—	—	C.S.F., no coagulum. C.S.F., no organisms. C.S.F., no pressure.
26	Mnyamwezi	Male ..	60	?	Mitral nodules marked. Aortic nodules and patches	L. lung oid adhesions, especially apex. Cavity size of walnut. L. apex T.B. Adhesions R.	Very friable, small	Linear injection of cortices	Very friable	—	Small intest inflamed in parts	2″	—	Pus from lung cavity. T.B. positive strongly.
27	Mchagga ..	Female	3 days	Melæna neonatorum	—	—	—	Several small hæmorrhages in medulla	—	—	Small intest full of black blood. Stomach and colon free. No intussusception	—	—	Umbilical vessels normal.
28	Mganda ..	Male ..	Adult	Typhoid fever	Mitral nodules slight. Aortic patches	Adhesions L. apex. Emphysema both apices	Very large, soft. Areas of dark red	Congested ..	Large ..	—	Ileum typical typhoid ulcers	Slight inflammation	Mesenteric many large glands ; one contained pus	Pus from gland negative.
29	Mchagga ..	Male ..	Adult	?	Mitral nodules. Aortic valve perforated	Apex L. lower lobe necrotic, not like T.B. Adhesions R. base	Large, soft. Areas of dark red or black	Both large and congested	—	—	Ileum inflamed, typical typhoid ulcers	3″	—	—
30	Mnyamwezi	Male ..	Adult	Lobar pneumonia	Mitral and tricuspid nodules. R. auricle greatly dilated	L. upper lobe grey hepat. ; lower congested. R. upper lobe base in red hepat. ; L. pleurisy	Large, soft. Congested	Both large and congested	—	—	—	4″	—	Lung smear pneumococci.
31	Mchagga ..	Male ..	Adult	Cerebral malaria	Mitral and tricuspid nodules. Aortic patches	—	Large, soft ..	Some injection	—	—	P.M. intussusception	5″	—	Blood smear S.T. strongly positive. Liver and spleen smears negative.

32	Habashi ..	Male ..	40	C.S.M. ..	Mitral and aortic nodules. Aortic patches	Adhesions R. base. No. sign of T.B.	Large, soft ..	Both injected	Fibrous ..	Subdural pus. Fluid under pressure in third and lateral ventricles	—	6″	—	C.S.F. was pus; gram negative, diplococci present.
33	Mchagga ..	Male ..	35	Diarrhœa ..	Mitral and tricuspid nodules	—	Small, hard ..	Amyloid cortex thick.	Small, fibrous	—	Ulcers in cæcum. Mucous membrane thickened, cæcum and sigmoid	5″	Mesenteric glands enlarged	No amœbæ in smears. Ulcerative colitis.
34	Mchagga ..	Female	45	Murder ..	Mitral nodules marked. Tricuspid nodules. Aortic nodules and patches	Adhesions to diaphragm both sides	Small, fibrous	—	—	—	—	4″	—	Murdered by cutting instrument. Uterus, etc., normal.
35	Mnyamwezi	Male ..	30	Pneumonia	Mitral, aortic and tricuspid nodules. Aortic patches, muscle pale and flabby	R. lung all lobes in grey hepat. Pleura adherent (recent). Old adhesions L. lung	Large ..	Slightly large and pale. Congested	Large ..	—	—	6″	—	—
36	Mchagga ..	Male ..	40	Suicide ..	—	Emphysema, adhesions posteriorly	—	—	—	—	—	—	—	Abdomen not opened.
37	Msukuma	Male ..	40	T.B. lungs	Mitral and aortic nodules marked. Aortic patches	R. apex large cavity. Miliary T.B. on pleura and both other lobes, and in L. lung. Small cavities in apex L. lung	Large ..	Amyloid. Cortical infarcts	Amyloid ..	—	Miliary T.B. on visceral peritoneum and mesentery following lymphatics	4″	Mesenteric glands large and hard	Dry powder in mass attached to colon.
38	Mchagga ..	Male ..	40	? poisoning	Aorta had yellow raised ridges	Old adhesions L. base	—	—	—	—	—	3½″	—	Cause of death not evident.
39	Mchagga ..	Male ..	1½	Lobar pneumonia	Mitral nodules. Pericardium rough and distended with fluid (purulent)	R. fibrinous pleurisy, L. broncho-pneumonia, especially upper lobe	Large, mottled	Injected, ? cloudy swelling	—	—	—	2″	—	Pneumococci in pericardial fluid.
40	Mchagga ..	Male ..	20	?	Mitral and tricuspid nodules. Pericardium had excess of clear fluid. Mitral ring and right ventricle dilated	Old adhesions L. base. R. lung patches of congestion	One large infarct	Both grossly large and nodular. Cortex very thick, with red infarcts. Large white kidney with sclerosis	L. lobe had several hard nodules	—	Much clear fluid in peritoneum, which clotted easily	2″	—	—

No.	Tribe.	Sex.	Age.	Diagnosis.	Heart.	Lungs.	Spleen.	Kidneys.	Liver.	Brain.	Intestine.	Appendix.	Lymphatic.	Remarks.
41	Mchagga ..	Male ..	14	Pneumonia, lobar	Mitral and tricuspid nodules. Aorta slight yellow striations	R. upper lobe grey hepat., also lower, especially apex. Apex L. upper lobe red hepat.	Very large ..	Cloudy swelling	Large, ? fatty degeneration or cloudy swelling	—	—	—	—	No sign of T.B.
42	Mchagga ..	Male ..	30	Diarrhœa ..	Mitral and tricuspid nodules marked. Aortic patches. Muscle thick	Old adhesions both	—	Slightly congested	—	—	Hæmorrhages in ileum. Jejunum inflamed. Ulcers in cæcum. Stomach very dilated	—	—	Acute enteritis. Sudden collapse.
43	Mchagga ..	Male ..	18	Anæmia. Hookworm	Mitral nodules. Endocardial hæmorrhages. Very dilated	Œdematous ..	Very large ..	—	—	—	—	—	—	H.W. ova in stool. Heart failure due to anæmia.
44	Mchagga ..	Female	New born	Stillborn ..	Very congested	Airless ..	—	Slightly lobulated	Very large	—	—	—	—	Asphyxia, prolonged labour.
45	Mrangi ..	Male ..	4	Abdominal anthrax	—	—	—	—	—	—	Fibrinous inflammation in small intestine	—	—	Large capsulated bacilli. Whole family ill after eating spleen of one ox. Several died.
46	Mchagga ..	Male ..	60	Abdominal tumour	Mitral and aortic fibrosis. Aortic patches	Adhesions both apices. No sign of T.B.	—	Both waxy surface cysts. R. pelvis dilated	—	—	Colon very distended, partial obstruction	—	—	Large myxoma, probably from pelvic cellular tissue.
47	Iramba ..	Male ..	60	Hookworm	Mitral, tricuspid and aortic nodules. Aortic patches. Dilatation of aortic ring	Cavity at apex of R. lung, old T.B. Adhesions both apices and L. base	Very large. Several small abscesses	Typical chronic parenchymatous nephritis	—	—	Small intestine congested	3″	—	Lung pus negative.
48	Mchagga ..	Male ..	20	T.B. peritonitis	Mitral nodules. Perforation of aortic valve	Adhesions L. base (old)	Large ..	—	—	—	Caseating tubercles on ileum. Intestines matted	—	Glands large, caseating in mesentery and liver hilum	Smears from tubercles negative.
49	Mchagga ..	Male ..	30	T.B. lungs...	Adherent pericardium. Mitral and aortic nodules. Aortic patches	Cavity and emphysema L. apex. Miliary T.B. all lobes both lungs. Adhesions apex and base both lungs	Miliary tubercles	Abscesses as large as peas. Congested	Miliary tubercles	—	Large abscess in L. iliac fossa with sinus. Miliary T.B. (peritoneal). No ulcers in bowel	—	All large in mesentery, semi-calcified	Lungs, pus T.B. strongly positive.

No.	Tribe.	Sex.	Age.	Diagnosis.	Heart.	Lungs.	Spleen.	Kidneys.	Liver.	Brain.	Intestine.	Appendix.	Lymphatic.	Remarks.
50	Mchagga ..	Male ..	15	Burns ..	Tricuspid nodules	Adhesions R. upper lobe (base) old	—	Cortex thick, waxy and pale	—	—	Two patches of congestion in ileum, no ulcers. Rugæ almost gone. Much ascitic fluid	2½″	—	Death from anæmia and sepsis.
51	Mchagga ..	Male ..	12	Dead—no history	Mitral and tricuspid nodules	—	Large ..	Cortices thick and congested	Pale and patchy. ? Cloudy swelling	Normal ..	Stomach distended with gas	3½″	—	Smear of splenic blood. M.P. positive. Died from a fever.
52	Mchagga ..	Male ..	50	?	Mitral nodules marked. Aortic valve sclerosed	R. two large cavities apex upper lobe. Other areas of caseation. Lower lobe scattered tubercles. Old adhesions both lungs	Small ..	Cortices thick and pale-amyloid	—	—	Small intestine typical T.B. ulcer, and peritoneal tubercles. Transverse and sigmoid colon filled with large areas of thickened mucous membrane, probably chronic amœbiasis	3½″	—	Lung smear, T.B. strongly positive.
53	Mchagga ..	Male ..	20	Acute nephritis	Mitral nodules marked. Tricuspid nodules. Aortic patches. All cavities very dilated	—	Very large. Mottled	Both large and inflamed. Cortices thick and injected. Acute nephritis	Large. Yellow patches like fatty degeneration	Hard white nodules near superior longitudinal sinus. Dura and arachnoid adherent	—	5″	—	Urine, albumen strongly positive, also blood cells and casts. Blood negative.

Notes on a Case of Contracted Pelvis Necessitating Cæsarean Section. By Dr. J. W. Walker, M.B., Ch.B. (Glas.), Medical Officer, Iringa.

Owing to having taken charge of the station only a fortnight before the end of the year, I am in a position to speak with authority on only one case of interest.

The case was one of a European woman with a generally contracted pelvis necessitating Cæsarean section.

Whilst passing through Iringa, *en route* Tukuyu, at the end of October, I was requested by Dr. Shelton to see this woman, in consultation.

She was a primipara aged 22 years. It was the first pregnancy and she was due to go into labour about 15th November, *i.e.*, two weeks later.

The vertex presented, but the head was floating and would not engage. There was no evidence of fœtal abnormality.

External and internal measurements indicated a generally contracted pelvis. It was decided to operate on or about the 14th November or earlier if labour commenced.

The section was performed in the European hospital on 15th November, 1929. No tendency to engagement had occurred in the interval. Mr. R. H. Doshi, Sub-Assistant Surgeon, gave the anæsthetic.

A living male child was delivered by Dr. Shelton. There was tendency to brisk hæmorrhage during the separation and removal of the membranes, and my assistance here was of considerable value.

The patient withstood the operation well and made an uneventful recovery.

The child is thriving excellently.

Note on a Case of Ainhum. By Mr. D. A. Purandare, L.C.P. & S. (Bombay), Senior Sub-Assistant Surgeon, Moshi.

The patient, a healthy Mchagga female of about 25, came to the out-patient department for treatment of the painful raw stump of her right little toe, the distal portion of which had ulcerated off. The history was that eight months previously the disease had begun as a small sore on the plantor surface of the toe, which gradually deepened and extended round the whole circumference of the toe. The groove thus formed spread, and finally the gangrenous distal portion became detached, leaving a raw surface.

She showed no sign of yaws, syphilis or leprosy.

Table of Microscopic Work done in the Native Hospital, Moshi, from August to December. By Senior Sub-Assistant Surgeon D. A. Purandare and Sub-Assistant Surgeon D. S. Mahabal, L.C.P. & S. (Bombay).

Specimen.	No.	Positive.	Organism.	Negative.
Fæces	460	418	Intestinal parasites	42
Blood	206	173	Malaria	31
		2	Spirillum	
Sputum	21	15	T.B.	6
Meningeal smear	1	1	T.B.	—
Urethral smear	7	7	Gonococci	—
Vaginal smear	7	7	Gonococci	—
Urine	15	3	Gonococci	4
		8	Pus cells, etc.	—
Ulcer scraping	1	1	Staphylococci	—
			Streptococci	—
Throat scraping	1	—		1
Nasal smear	1	—		1
Rectal smear	1	—		1
Cerebro-spinal fluid	2	2	Meningococci	—
Total	723	637	——	86

In addition to these, 33 scrapings from ulcers were examined, but no organisms morphologically resembling the Klebs-Loeffler bacillus were found.

The intestinal parasites were found as under :—

Parasite—		Per cent.
Ascaris	285	65·8
Tænia	86	20·6
Hookworm	52	12·4
Trichocephalus	43	10·3
Strongyloides	10	2·4
Amœbæ (histolytica)	9	2·1
Schistosoma	2	0·5
Oxyuris	1	0·25

Only such cases were examined as were clinically suspected of harbouring worms. Many had multiple infections. For the cases of ascaris, oil of chenopodium was found to be almost as effective as santonin.

Notes on Relapsing Fever Cases and Effect of Neokharsivan on them. By Mr. P. V. Gokhale, L.C.P. & S. (Bombay), Sub-Assistant Surgeon, Kasulo.

Case No. 1.—An Indian from Kigoma, age about 25 years, had arrived from India for the first time five months ago, and then got spirillum fever. He had severe headache and rigors. The blood found was positive and he was given ·45 of neokharsivan when his temperature was 102 and still rising, and the rigors passing off. Temperature remained continuous for three days and came down to normal. On the tenth day he again complained of severe headache, with a temperature of 99. The blood was found positive and the patient was given a dose of ·75. The temperature did not rise, but headache persisted for three days. His mild relapses of fever and severe headache continued for a further period of three months, in spite of his having had two more injections of ·75 each. The headache persisted for a long time and the patient could scarcely open his eyes, due to neuralgia. After four injections all further injections were stopped, and he was kept on iron and arsenic tonic with 10 grains of quinine. All symptoms disappeared in one month's time.

Case No. 2.—An Indian woman, aged 25 years, had two relapses of fever at an interval of 10 days. The blood was found negative in both these, but symptoms suggested possibility of tick fever. Urine was cloudy and there was a considerable amount of albumin in it. The third relapse showed only three spirilla in the thick blood film. I failed to give her neokharsivan, due to invisible small veins, but gave her subcutaneously sulfarsanol. She was apparently cured and had no more relapses.

Case No. 3.—One European. Patient told me that his slide was found positive in Tabora, but as his temperature had come down to normal by the time, he was not given any injection, but was told to report again when he got a temperature. After some six months I happened to meet him on my way to Kasulo. He said he was in bed for two days with fever. I took his slides and, when examined in Kasulo, found them positive. He received no injections and has had no more relapses during the last one year.

Case No. 4.—One Indian official from Ujiji, aged 37 years, got tick fever and had about four injections of neokharsivan. He was seen by me three months after the attack. He had one black spot in his vision at about 4 o'clock, and when reading his eyes used to water and the whole image used to be blurred. Eye examination did not show anything abnormal and he had no refraction. The first urine in the morning was milky white, and when allowed to stand in a specimen glass the deposits amounted to one-third of the quantity. These deposits were phosphates and urates. The blood was negative and he did not get any attacks of fever, but the eye complaint persisted for a long time. He was given four more injections of neokharsivan and four of sodium iodide intravenously, but they had very little effect. At intervals the complaint used to get worse. He gradually improved during the next six months.

Case No. 5.—Sub-Assistant Surgeon Joshi sent his slides for examination to Kigoma, and they were found to be swarming with spirilla. I was sent to Kasulo to treat him.

He had regular seven-days' relapses in spite of six injections of neokharsivan, the doses gradually rising from ·45 and the last three being ·75. He was transferred to Tabora Hospital, where he had one injection of khar-sulphan. His temperature used to vary from 99 to 100 in hospital during the day, but settled down to normal after a month.

In addition to the above, I have seen about 30 cases of relapsing fever in natives, but I have not seen any case of relapse in them after one injection of neokharsivan, whether the injection was given on the first day or the third day of the attack.

The question arises, why do natives show better results with neokharsivan? Sagel (Tropical Diseases Bulletin of August, 1929, page 655) says, "Neosalvarsan and sodium benzazon were found to check infections with the three strains, *S. Berbera*, *S. Hispanica* and *Angola*, but had very little effect on *S. Duttoni*." *S. Duttoni* is said to be common in this part, but only natives give good results with salvarsan preparations. Does it mean that *S. Duttoni* does not affect natives so seriously as it does non-natives?

The first attack of tick fever is as severe in the natives as in non-natives, but the difficulty is that one seldom finds a native with a primary attack. I am of the opinion that spirillum fever, though it does not give immunity from further attacks, certainly modifies their course, and when natives attend the hospital after many attacks, one finds that they do not show severe symptoms.

Patients who get apparently cured without any treatment may be latent "carriers" of infection.

Salvarsan and its preparations, therefore, though a good remedy for spirillum fever, fall short of good results in some.

RETURNS.

Medical Staff.—Disposition of as on 31st December, 1929.

Name and Qualifications.	Rank.	Station.	Remarks.
J. O. Shircore, C.M.G., M.B., Ch.B. (Edin.), L.R.C.P., L.R.C.S. and L.R.F.P.S. (Edin. and Glas.), M.R.C.P. (Edin.).	D.M.S.S.	Dar-es-Salaam.	
J. Pugh, M.R.C.S. (Eng.), L.R.C.P. (Lond.).	D.D.M.S.	On leave.	
A. H. Owen, B.A. (Camb.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M. and H. (Camb.).	D.D.S.S.	Dar-es-Salaam.	
P. A. Clearkin, M.B., B.Ch., B.A.O. (Belf.), D.P.H. (Irel.).	D.D.L.S.	,,	
H. J. O'D. Burke-Gaffney, M.B., B.Ch., B.A.O. (Dub.).	Asst. Bacteriologist	,,	
J. W. McHardy, B.Sc. (Agric.) (Edin.)	Entomologist ..	,,	
W. Whitley, B.A. (Oxon.), A.I.C. ..	Analytical Chemist	,,	
T. H. Suffern, M.B., B.A.O., Ch.B. (Roy. University, Ireland).	S.M.O.	Tabora.	
C. L. Ievers, L.R.C.S., L.R.C.P. (Edin.),	,, ...	Tabora.	
D.T.M. (Liv.), L.R.F.P.S. (Glas.).	,, ...	Tanga.	
G. R. C. Wilson, M.R.C.S. (Eng.), L.R.C.P. (Lond.).	,, ...	Dar-es-Salaam ..	Acting D.D.M.S
J. H. Parry, B.A. (Cantab.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).	,, ...	,,	
A. S. Mackie, M.B., Ch.B. (Aberd.) ..			
R. R. Scott, M.C., M.B., B.S. (Durham),	,, ...	Mwanza.	
M.R.C.S. (Eng.), L.R.C.P., D.P.H. (Lond.).	S.H.O.	Dar-es-Salaam.	
R. Nixon, M.B., Ch.B., D.T.M., D.P.H. (Liv.).	,, ...	Tanga.	
H. H. B. Follit, M.A. (Cantab.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.P.H. (Camb.).	,, ...	Dar-es-Salaam.	

RETURNS—*continued.*

Medical Staff.—Disposition of as on 31st December, 1929—*continued.*

Name and Qualifications.	Rank.	Station.	Remarks.
G. Maclean, M.B.E., M.B., Ch.B. (Glas.), D.T.M. (Liv.).	Sleeping Sickness Officer.	Tabora.	
J. F. Corson, M.B.E., M.D., Ch.B. (Manch.), D.P.H., D.T.M. and H. (Cantab.).	Medical Officer ..	Maswa	Sleeping Sickness duty.
A McA. Blackwood, M.B., Ch.B. (Glas.).	,, ,, ..	Dodoma.	
C. H. Philips, L.M.S.S.A. (Lond.) ..	,, ,, ..	On leave.	
G. A. Williams, M.R.C.S. (Eng.), L.R.C.P. (Lond.).	,, ,, ..	,,	
W. H. Dye, M.R.C.S. (Eng.), L.R.C.P. (Lond.), L.D.S., R.C.S. (Eng.), D.T.M. and H. (Lond.).	,, ,, ..	Tukuyu.	
C. F. Shelton, M.D., M.R.C.P. (Lond.), M.R.C.S. (Eng.), B.S., D.T.M. and H. (Lond.).	,, ,, ..	Iringa.	
A. I. Meek, L.R.C.P., L.R.C.S., D.P.H. (Edin.), L.R.F.P. and S. (Glas.), D.T.M. (Liv.).	Health Officer ..	On leave.	
J. J. B. Edmond, M.C., M.D., Ch.B. (Edin.), D.T.M. and H. (Lond.).	Medical Officer ..	Tabora	Sleeping Sickness duty.
A. R. Lester, M.B., B.S. (Bombay), F.R.F.P.S. (Glas.), D.P.H., D.T.M. and H. (Edin.).	,, ,, ..	Kahama	Maternity and Child Welfare.
W. K. Connell, M.B., Ch.B. (Glas.), F.R.C.S. (Eng.).	,, ,, ..	On leave.	
F. R. Lockhart, M.B., Ch.B. (Manch.)	,, ,, ..	,,	
D. V. Latham, B.A., M.B., Ch.B., B.A.O. (Lond.).	,, ,, ..	Kilosa.	
T. Langan, M.B., Ch.B., B.A.O. (Dub.)	,, ,, ..	Tabora	Sleeping Sickness duty.
H. Fairbairn, M.B., Ch.B. (Glas.) ..	,, ,, ..	On leave.	
J. Williamson, M.B., Ch.B. (Edin.) ..	,, ,, ..	Lushoto.	
C. R. Steel, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M. and H. (Lond.).	,, ,, ..	Kigoma.	
J. W. Graham, M.C., M.A., M.D., Ch.B. (Glas.).	,, ,, ..	Tabora.	
R. C. Speirs, M.B., Ch.B. (Edin.) ..	,, ,, ..	Arusha.	
J. S. Armstrong, M.C., B.A., M.B., B.Ch., B.A.O. (Dub.).	,, ,, ..	Mahenge.	
R. Mackay, M.B., Ch.B. (Aberd.) ..	Health Officer ..	Mwanza	Acting Senior Health Officer.
B. O. Wilkin, M.B., Ch.B. (Edin.) ..	Medical Officer ..	Kondoa.	
A. McKenzie, M.B., B.S., D.T.M. and H., L.M.S.S.A. (Lond.).	,, ,, ..	Songea.	
G. S. P. Noble, M.B., Ch.B. (Glas.) ..	,, ,, ..	Dar-es-Salaam.	
L. A. Willmott, M.B., B.S. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).	,, ,, ..	Morogoro.	
I. Sanderson, M.B., Ch.B. (Edin.), D.T.M. and H. (Liv.).	,, ,, ..	Lindi.	
D. A. Skan, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M., D.T.H. (Liv.).	,, ,, ..	Mpwapwa.	
B. A. Coghlan, M.B., Ch.B., B.A.O. (Dub.), D.T.M. (Liv.).	,, ,, ..	On leave.	
W. J. Aitken, M.B., Ch.B. (Glas.), D.T.M. and H. (Liv.).	,, ,, ..	Moshi.	
H. N. Davies, M.B., Ch.B. (Edin.), D.T.M. (Liv.).	,, ,, ..	Kibongoto.	
P. S. Bell, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M. and H. (Eng.).	,, ,, ..	Tanga.	
J. H. McDonald, M.B., Ch.B. (Aberd.)	,, ,, ..	Dar-es-Salaam.	

RETURNS—*continued.*

Medical Staff.—Disposition of as on 31st December, 1929—*continued.*

Name and Qualifications.	Rank.	Station.	Remarks.
J. Harkness, L.R.C.P., L.R.C.S. and L.R.F.P.S. (Edin. and Glas.), L.D.S., R.C.S. (Edin.).	Medical Officer ..	Bukoba.	
Miss M. Harvey Clarke, M.R.C.S. (Eng.), L.R.C.P., D.P.H. (Lond.).	,, ,, ..	On leave.	
C. Wilcocks, M.B., Ch.B. (Victoria) ..	,, ,, ..	Moshi.	
S. E. Theis, M.R.C.S. (Eng.), L.R.C.P. (Lond.).	,, ,, ..	On leave.	
C. J. MacQuillan, B.A., M.B., Ch.B., B.A.O. (Dub.).	,, ,, ..	,,	
A. V. Clemmey, M.A. (Oxon.), M.B., Ch.B. (Oxon.), M.R.C.S., L.R.C.P. (Lond.).	Health Officer ..	Tabora.	
D. E. Wilson, M.B., Ch.B. (Aberd.) ..	Medical Officer ..	Dar-es-Salaam ..	Attached Laboratory.
J. B. C. Madge, M.B., Ch.B. (Edin.) ..	,, ,, ..	Singida.	
F. V. Adams, M.B., Ch.B. (Glas.) ..	,, ,, ..	Kahama	Sleeping Sickness duty.
K. Edmundson, M.B., Ch.B. (Liv.) ..	Health Officer ..	Lindi.	
N. Chilton, B.A., M.B., B.Ch. (Oxon.), D.T.M. and H. (Eng.).	Medical Officer ..	Dar-es-Salaam.	
D. B. Wilson, M.A. (Camb.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.T.M. and H.	Health Officer ..	Moshi.	
I. C. Middleton, M.B., Ch.B. (Edin.), D.T.M. (Liv.).	Medical Officer ..	Dar-es-Salaam ..	Port Health Officer.
J. W. Walker, M.B., Ch.B. (Glas.) ..	,, ,, ..	Iringa.	
H. M. Fisher, L.D.S., R.C.S. (Eng.) ..	Dental Surgeon ..	Dar-es-Salaam.	
A. S. Newton, L.D.S. (Liv.)	,, ,, ..	Tanga.	
S. Anderberg	Dental Mechanic ..	Dar-es-Salaam.	
Miss F. M. Plant	Matron	,,	
Miss J. Fraser	Senior Nursing Sister.	Tanga.	
Miss E. L. Kemsley, R.R.C.	,, ,,	Kahama.	
Miss E. Bishop	,, ,,	Tanga.	
Miss M. Donald	,, ,,	Tabora.	
Miss B. G. Allardes	Sister and Health Visitor.	On leave.	
Miss A. L. Ryder	,, ,,	Nzega.	
Miss E. Neale	,, ,,	Moshi.	
Miss C. Kemp	,, ,,	Tabora.	
Miss M. B. Craig	,, ,,	Dar-es-Salaam.	
Miss A. A. Howorth	,, ,,	Bagamoyo.	
Miss E. Ashberry	,, ,,	Mwanza.	
Miss M. L. E. Avant	,, ,,	On leave.	
Miss A. C. MacPhee	,, ,,	Tabora.	
Miss K. Thompson	Nursing Sister ..	Iringa.	
Miss A. Muncaster	,, ,, ..	Dar-es-Salaam.	
Mrs. M. K. Turnley	,, ,, ..	Dodoma.	
Miss E. Haslett	,, ,, ..	Lindi.	
Miss K. P. Heckford	,, ,, ..	On leave.	
Mrs. E. B. Maclean	,, ,, ..	Tanga.	
Miss M. Kay	,, ,, ..	Dar-es-Salaam.	
Miss J. D. Leighton	,, ,, ..	On leave.	
Miss R. V. G. Daye	,, ,, ..	,,	
Miss J. L. Vaux	,, ,, ..	Tabora.	
Miss L. M. Bishop	,, ,, ..	Dar-es-Salaam.	
Miss B. Eager	,, ,, ..	,,	
Miss J. Turnbull	,, ,, ..	,,	
Miss M. C. Ferguson	,, ,, ..	Tabora.	
Miss V. I. Dargan	,, ,, ..	Arusha.	

RETURNS—*continued.*

Medical Staff.—Disposition of as on 31st December, 1929—*continued.*

Name and Qualifications.	Rank.	Station.	Remarks.
Miss M. H. MacDonald	Nursing Sister ..	Dar-es-Salaam.	
Miss A. S. Milne	,, ,, ..	Kigoma.	
Miss R. D. Whiteoak	,, ,, ..	Dar-es-Salaam.	
Miss E. B. Short	,, ,, ..	Tanga.	
Mrs. J. M. Goddard	,, ,, ..	On leave.	
Miss E. M. White	,, ,, ..	Tanga.	
Miss E. M. Middleton	,, ,, ..	Moshi.	
Miss A. C. Troughton	,, ,, ..	Dar-es-Salaam.	
Miss L. Somen	,, ,, ..	Tanga.	
Miss A. Smith	,, ,, ..	Dar-es-Salaam.	
Mrs. E. L. Evans	,, ,, ..	Mwanza.	
Miss. A. H. Gittins	,, ,, ..	Dar-es-Salaam.	
B. G. Pandit, L.C.P. and S. (Bombay)	Assistant Surgeon	Bukoba.	
D. A. Purandare, L.C.P. and S. (Bomb.)	Senior Sub-Asst. Surgeon.	Moshi.	
Y. L. Moole, L.C.P. and S. (Bomb.) ..	,, ,,	Nzega.	
C. K. Borsada, L.C.P. and S. (Bomb.)	,, ,,	Tanga.	
P. S. Paranjpe, L.C.P. and S. (Bomb.)	Sub-Asst. Surgeon	Mwanza.	
M. C. K. Thomas, L.M.S.M.G. (Trav.)	,, ,,	Dar-es-Salaam.	
Y. B. Kelshiker, L.C.P. and S. (Bomb.).	,, ,,	Tanga.	
G. V. Sakriker, L.C.P. and S. (Bomb.)	,, ,,	Mwanza.	
B. K. Christian, L.C.P. and S. (Bomb.)	,, ,,	On leave.	
M. P. Dave, L.C.P. and S. (Bomb.) ..	,, ,,	Arusha.	
Chunilal Khana	,, ,,	Dar-es-Salaam.	
T. M. Joseph, L.M.S.S.A. (Lond.), L.M.P. (Madras).	,, ,,	Pangani.	
W. A. Irvine, L.C.P. and S. (Bomb.) ..	,, ,,	Kigoma.	
S. R. Abhyankar, L.C.P. and S. (Bomb.).	,, ,,	Bagamoyo.	
C. K. Desai, L.C.P. and S. (Bomb.) ..	,, ,,	On leave.	
P. V. Gokhale, L.C.P. and S. (Bomb.)	,, ,,	Kasulo.	
M. B. Pandya, L.C.P. and S. (Bomb.)	,, ,,	Ujiji.	
L. Coro	,, ,,	Sumbawanga.	
Sant Ram, Cert. Lahore Med. School ..	,, ,,	Mikindani.	
D. A. Mhaiskar, L.C.P. and S. (Bomb.)	,, ,,	Mahenge.	
Hari Singh, L.S.M.F. (Punjab) ..	,, ,,	Tabora.	
V. S. Nijasure, L.C.P. and S. (Bomb.)	,, ,,	Kibaya.	
W. R. Bowry, L.M.F. (Bengal) ..	,, ,,	Dodoma.	
G. V. Godbole, L.C.P. and S. (Bomb.)	,, ,,	Musoma.	
Harbal Singh, L.M.F. (Punjab) ..	,, ,,	Kahama.	
G. A. Mhaiskar, L.C.P. and S. (Bomb.)	,, ,,	Morogoro.	
N. B. Tote, L.C.P. and S. (Bomb.) ..	,, ,,	Kahama.	
S. E. Puram, L.C.P. and S. (Calcutta)	,, ,,	Shinyanga.	
G. V. Sane, L.C.P. and S. (Bomb.) ..	,, ,,	Mpwapwa.	
Maluk Singh, L.M.F. (Punjab) ..	,, ,,	Mwanza.	
Ram Singh, L.S.M.F. (Punjab) ..	,, ,,	Kilosa.	
P. N. Nair, L.M.P. (Madras)	,, ,,	Lindi.	
Harcharan Singh, L.M.P. (Cent. Prov.)	,, ,,	On leave.	
S. W. Gupte, L.C.P. and S. (Bomb.) ..	,, ,,	,,	
Basant Singh, L.M.P. (Agra)	,, ,,	Uyogo.	
P. R. Dhavle, I.M.D. (Poona)	,, ,,	Dar-es-Salaam.	
G. K. Khot, L.C.P. and S. (Bomb.) ..	,, ,,	On leave.	
S. N. Patel, L.C.P. and S. (Bomb.) ..	,, ,,	Lindi.	
M. G. Panvalkar, L.C.P. and S. (Bomb.).	,, ,,	Dar-es-Salaam.	
G. V. Harischandraker, L.C.P. and S. (Bomb.).	,, ,,	Mbeya.	
J. K. Dave, L.C.P. and S. (Bomb.) ..	,, ,,	Tabora.	
G. R. Gore, L.C.P. and S. (Bomb.) ..	,, ,,	Utete.	
P. K. Date, L.M.P. (Cent. Prov.) ..	,, ,,	Mbulu.	

RETURNS—*continued.*

Medical Staff.—Disposition of as on 31st December, 1929—*continued.*

Name and Qualifications.	Rank.	Station.	Remarks.
V. V. Apte, L.C.P. and S. (Bomb.) ..	Sub-Asst. Surgeon	On leave.	
Jagat Singh Dosanjh, L.M.F. (Bengal)	,, ,,	Mafia.	
V. S. Kanitkar, L.C.P. and S. (Bomb.)	,, ,,	Tanga.	
K. V. Ananthakrishanan Iyer, L.M. and S. (Madras).	,, ,,	On leave.	
N. C. Daniel, L.M.P. (Madras) ..	,, ,,	Kahama.	
S. S. Nadkarni, L.C.P. and S. (Bomb.)	,, ,,	Biharamulo.	
I. D. Abraham, L.M.F. (Calcutta) ..	,, ,,	Tanga.	
M. S. Reddi, L.M.P. (Madras) ..	,, ,,	Songea.	
R. H. Doshi, Hosp. Asst., Hyd. (Sind)	,, ,,	Iringa.	
S. B. Tulpule, L.C.P. and S. (Bomb.)	,, ,,	Ikoma.	
D. S. Mahabal, L.C.P. and S. (Bomb.)	,, ,,	Moshi.	
R. R. Joshi, L.C.P. and S. (Bomb.) ..	,, ,,	Tabora.	
R. B. Dabir, L.M.P. (Cent. Prov.) ..	,, ,,	Bukoba.	
R. J. Koya, M.B., B.S. (Bomb.) ..	,, ,,	Arusha.	
M. Viswanathan, L.M.S. (Hyderabad)	,, ,,	Mkalama.	
Piara Singh, L.M.P. (Agra)	,, ,,	Dar-es-Salaam.	
D. C. Mehta, M.B., B.S. (Lahore) ..	,, ,,	Tunduru.	
M. A. Carpenter, L.C.P. and S. (Bomb.)	,, ,,	Kilwa.	
B. N. Dikshit, L.C.P. and S. (Bomb.)	,, ,,	Kibondo.	
V. V. Dabholkar, L.C.P. and S. (Bomb.)	,, ,,	Bukoba.	
J. B. Gonsalves, L.C.P. and S. (Bomb.).	,, ,,	Dar-es-Salaam.	

PRINCIPAL CHANGES.

Transfers.

Mr. W. A. Willox, Sanitary Superintendent, to Nyasaland, 19th September.
Mr. A. L. George, Sanitary Superintendent, to Labour Department, 15th November.

Leave of Absence.

European.

Dr. J. Pugh, Deputy Director of Medical Service, 30th July till end of the year.
Dr. A. H. Owen, Deputy Director of Sanitary Service, 15th February till 14th October.
Dr. G. R. C. Wilson, Senior Medical Officer, 15th February till 28th November.
Dr. J. H. Parry, Senior Medical Officer, 6th March till 28th November.
Dr. R. R. Scott, M.C., Senior Health Officer, beginning of the year till 12th April.
Dr. G. Maclean, M.B.E., Sleeping Sickness Officer, 6th March till 7th December.
Dr. J. F. Corson, M.B.E., Medical Officer, beginning of the year till 25th January.
Dr. A. McA. Blackwood, Medical Officer, beginning of the year till 3rd March.
Dr. C. H. Philips, Medical Officer, 26th May till end of the year.
Dr. G. A. Williams, Medical Officer, 9th December till end of the year.
Dr. A. I. Meek, Medical Officer, 21st October till end of the year.
Dr. W. K. Connell, Medical Officer, 12th November till end of the year.
Dr. F. R. Lockhart, Medical Officer, 27th November till end of the year.
Dr. H. Fairbairn, Medical Officer, 9th September till end of the year.
Dr. J. S. Armstrong, Medical Officer, beginning of the year till 25th January.
Dr. G. S. Park Noble, Medical Officer, beginning of the year till 12th June.
Dr. L. A. Willmott, Medical Officer, beginning of the year till 7th January.
Dr. D. A. Skan, Medical Officer, beginning of the year till 21st May.
Dr. B. A. Coghlan, Medical Officer, 6th March till end of the year.
Dr. W. J. Aitken, Medical Officer, beginning of the year till 25th May.
Dr. H. N. Davies, Medical Officer, 16th February till 26th November.
Dr. P. S. Bell, Medical Officer, beginning of the year till 28th March.

LEAVE OF ABSENCE—*continued.*

European—continued.

Dr. J. H. McDonald, Medical Officer, beginning of the year till 9th July.
Dr. M. Harvey Clarke, Medical Officer, 12th November till end of the year.
Dr. S. E. Theis, Medical Officer, 29th October till end of the year.
Dr. C. J. MacQuillan, Medical Officer, 3rd September till end of the year.
Mr. H. M. Fisher, Dental Surgeon, beginning of the year till 12th April.
Mr. J. W. McHardy, Entomologist, 31st March till 28th November.
Miss F. M. Plant, Matron, beginning of the year till 17th March.
Miss J. Fraser, Senior Nursing Sister, 7th December till end of the year.
Miss E. L. Kemsley, Senior Nursing Sister, beginning of the year till 29th March.
Miss E. Bishop, Senior Nursing Sister, 2nd April till 5th October.
Miss B. G. Allardes, Sister and Health Visitor, 20th November till end of the year.
Mrs. M. M. Makins, Sister and Health Visitor, 16th February till 1st November.
Miss M. V. McIlroy, Sister and Health Visitor, 23rd June till 1st November.
Miss M. L. E. Avant, Sister and Health Visitor, 23rd September till end of the year.
Miss K. Thompson, Nursing Sister, beginning of the year till 16th January.
Mrs. K. M. Turnley, Nursing Sister, beginning of the year till 11th May.
Miss E. Haslett, Nursing Sister, 26th February till 4th October.
Miss K. P. Heckford, Nursing Sister, 16th June till end of the year.
Miss D. A. Porter, Nursing Sister, 9th August till 16th December.
Miss J. D. Leighton, Nursing Sister, 2nd July till end of the year.
Miss M. Andrews, Nursing Sister, 1st February till 4th March.
Miss E. M. Hayward, Nursing Sister, 3rd August till 1st November.
Miss R. V. G. Daye, Nursing Sister, 7th October till end of the year.
Miss M. Taylor, Nursing Sister, 25th September till 17th December.
Miss L. M. Bishop, Nursing Sister, 26th February till 14th September.
Mrs. J. M. Goddard, Nursing Sister, 29th July till end of the year.
Mr. J. L. Mason, Chief Clerk, 31st March till 28th October.
Mr. H. W. Hassard, Storekeeper, 13th January till 28th October.
Mr. P. W. Morgan, Building Inspector, beginning of the year till 14th April.
Mr. H. Hammond, Laboratory Assistant, 7th April till 10th November.
Mr. H. L. Lachlan, Clerk, 20th November till end of the year.
Mr. W. A. Moore, Senior Sanitary Superintendent, 23rd October till end of the year.
Mr. T. Bell, Sanitary Superintendent, beginning of the year till 12th June.
Mr. W. M. Mackay, Sanitary Superintendent, 4th May till end of the year.
Mr. B. T. Bailey, Sanitary Superintendent, 31st July till end of the year.
Mr. C. E. W. Foster, Sanitary Superintendent, 27th February till 28th October.
Mr. E. L. Morgan, Sanitary Superintendent, 7th April till 7th December.
Mr. J. Allan, Sanitary Superintendent, beginning of the year till 10th June.
Mr. W. A. Willox, Sanitary Superintendent, 26th February till 18th September.
Mr. A. S. Murdison, Sanitary Superintendent, 9th June till end of the year.
Mr. J. E. Crawley, Medical Instructor, beginning of the year till 21st January.
Mr. J. H. Stafford, Assistant Medical Instructor, 6th March till 7th December.
Mr. C. Macquarie, Agricultural Surveyor, 12th April till 23rd December.

Asiatic.

Mr. D. A. Purandare, Senior Sub-Assistant Surgeon, beginning of the year till 13th July.
Mr. P. S. Paranjpe, Sub-Assistant Surgeon, beginning of the year till 21st April.
Mr. J. F. Macedo, Sub-Assistant Surgeon, beginning of the year till 24th February.
Mr. Y. B. Kelshikar, Sub-Assistant Surgeon, 25th June till 15th December.
Mr. M. C. Thomas, Sub-Assistant Surgeon, beginning of the year till 2nd June.
Mr. B. K. Christian, Sub-Assistant Surgeon, 28th October till end of the year.
Mr. Chunilal Khanna, Sub-Assistant Surgeon, 12th December till end of the year.
Mr. W. A. Irvine, Sub-Assistant Surgeon, beginning of the year till 19th May.
Mr. C. K. Desai, Sub-Assistant Surgeon, 23rd December till end of the year.

LEAVE OF ABSENCE—*continued.*

Asiatic—continued.

Mr. V. S. Nijasure, Sub-Assistant Surgeon, 12th May till 18th November.
Mr. G. V. Godbole, Sub-Assistant Surgeon, 18th February till 18th November.
Mr. Harbal Singh, Sub-Assistant Surgeon, 18th February till 18th November.
Mr. G. A. Mhaiskar, Sub-Assistant Surgeon, 5th March till 25th August.
Mr. N. B. Tote, Sub-Assistant Surgeon, 18th March till 8th September.
Mr. S. E. Puram, Sub-Assistant Surgeon, 5th March till 25th August.
Mr. G. V. Sane, Sub-Assistant Surgeon, 18th March till 8th September.
Mr. Maluk Singh, Sub-Assistant Surgeon, 18th March till 20th October.
Mr. P. N. Nair, Sub-Assistant Surgeon, 28th June till 15th December.
Mr. Harcharan Singh, Sub-Assistant Surgeon, 17th August till end of the year.
Mr. S. W. Gupte, Sub-Assistant Surgeon, 23rd December till end of the year.
Mr. G. K. Khot, Sub-Assistant Surgeon, 30th September till end of the year.
Mr. S. N. Patel, Sub-Assistant Surgeon, 28th May till 22nd September.
Mr. G. R. Gore, Sub-Assistant Surgeon, 25th June till 20th October.
Mr. V. V. Apte, Sub-Assistant Surgeon, 17th September till end of the year.
Mr. Jagat Singh Dosanjh, Sub-Assistant Surgeon, 4th August till 1st December.
Mr. J. C. X. Rodrigues, Compounder, 27th November till end of the year.
Mr. Jagat Singh, Compounder, 17th August till 3rd November.
Mr. M. A. Shaikh, Compounder, beginning of the year till 10th March.
Mr. J. B. Nathan, Compounder, beginning of the year till 19th May.
Mr. S. L. Dourado, Compounder, beginning of the year till 13th January.
Mr. P. F. X. Pimento, Compounder, 18th February till 11th August.
Mr. F. Lopez, Compounder, 18th February till 8th August.
Mr. C. Vaz, Compounder, 30th September till end of the year.
Mr. A. R. D'Silva, Compounder, 19th January till 30th June.
Mr. M. A. Vaishnav, Compounder, 7th August till end of the year.
Mr. R. E. Puram, Compounder, 5th March till 25th August.
Mr. A. E. L. Fernandes, Compounder, 15th October till end of the year.
Mr. J. de Souza, 1st Grade Clerk, 28th October till end of the year.
Mr. J. B. da Cunha, 2nd Grade Clerk, 30th September till end of the year.
Mr. D. B. Somvasi, 2nd Grade Clerk, beginning of the year till 16th June.
Mr. G. Hendricks, 3rd Grade Clerk, 8th January to 4th August.

TABLE II.

FINANCIAL.

Expenditure :—	£	£
PERSONAL EMOLUMENTS :		
Medical Division :		
Director of Medical and Sanitary Services ... ... } Deputy Director of Medical Service ... ... }	2,700	
Clerical Staff, Medical Storekeepers, Medical Instructors, Packers, Messengers, etc.	7,270	
Senior Medical Officers	5,400	
Medical Officers	34,080	
Sleeping Sickness Officer	1,100	
Dental Surgeons and Dental Mechanic	2,128	
Nursing Staff	10,230	
Superintendent and Matron, Mental Hospital, and Hospital Quartermaster...	1,278	
Asian Medical Assistants, *i.e.*, Assistant Surgeon, Senior Sub-Assistant Surgeons, Sub-Assistant Surgeons and Compounders	24,388	
African Dispensers, Hospital Orderlies and Nurses	9,390	
Other Charges	1,680	
Carried forward	———	99,644

TABLE II.—FINANCIAL—*continued.*

	£	£
Expenditure—continued.		
PERSONAL EMOLUMENTS—*continued.*		
Brought forward		99,644
Sanitation Division :		
Deputy Director of Sanitary Service and Senior Health Officers	5,900	
Sisters and Health Visitors, Building Inspector, Sanitary Superintendents and Subordinate Staff for the Suppression of Epidemic Diseases	20,506	
		26,406
Laboratory Division :		
Deputy Director of Laboratory Service, Assistant Bacteriologist, Entomologist, Analytical Chemist, Laboratory Assistants and other personnel attached	4,732	
		4,732
Total personal emoluments		130,782
OTHER CHARGES :—		
Administrative Division :		
Incidental expenses	457	
Medical Division :		
Miscellaneous Charges	5,157	
Sanitation Division :		
Sanitary Equipment	1,619	
Sanitary Labour	15,778	
Sanitary Oils and Disinfectants	398	
Uniforms	447	
Laboratory Division :		
Vaccines and Sera	308	
Miscellaneous	633	
Preventable Diseases, etc. :		
Epidemic Outbreaks and Special Sanitary Measures	181	
Leprosy and Incurables	4,470	
Maternity and Child Welfare	2,009	
Quarantine and Infectious Diseases Hospitals	1,423	
Quinine for Public Purchase at Post Offices	1,098	
Sleeping Sickness	11,603	
Tuberculosis	105	
Ankylostomiasis	482	
Venereal Diseases and Yaws	660	
Hospitals, Dispensaries and Mental Hospitals, Maintenance of :		
Equipment, Furniture, Microscopes, etc.	6,898	
Medical and Surgical Stores	18,543	
Upkeep of Hospitals	16,977	
Upkeep of Mental Hospitals	1,383	
Uniforms	448	
Miscellaneous :		
Books of Reference, Periodicals and Stationery	707	
Travelling and Transport :		
Box Bodies for Ambulances	183	
Drivers	132	
Motor Vehicles	2,453	
Travelling Equipment	266	
Transport, Railage and Passages	23,454	
Upkeep of Motor Boats	432	
Upkeep and Running Costs of Cars (part costs only)	178	
Total other Charges	118,882	118,882
Carried forward		249,664

TABLE II.—FINANCIAL—*continued.*

	£	£
Brought forward		249,664
SPECIAL INVESTIGATION INTO MEDICAL AND SOCIAL CONDITIONS, KAHAMA.		
Personal Emoluments :		
1 Medical Officer	920	
2 Sisters and Health Visitors	600	
4 Sub-Assistant Surgeons	1,003	
2 Motor Drivers (part salaries)	45	
20 Ayahs (Native Female Nurses)	244	
Total Expenditure	2,812	
		2,812
TOTAL		252,476

STATEMENT OF REVENUE, 1929.

Receipts :	£
From Hospital Fees, Sale of Drugs, etc....	10,607
Fees collected by Port and Marine Department and H.M. Customs for Bills of Health	1,347
Sale of Lymph Vaccine and Serum	140
TOTAL	12,094

TABLES V AND VI.

EUROPEANS (OFFICIAL AND NON-OFFICIAL).

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929.

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
I.—Epidemic, Endemic, and Infectious Diseases.									
1. Enteric Group—									
(*a*) Typhoid Fever ..	1	14	—	15	2	—	—	—	15
(*b*) Paratyphoid A ..	—	2	1	2	1	—	—	—	2
(*c*) Paratyphoid B ..	—	1	1	1	—	—	—	—	1
(*d*) Type not defined ..	—	3	—	3	—	1	—	1	4
2. Typhus	—	1	—	1	—	—	—	—	1
3. Relapsing Fever ..	—	5	1	5	—	3	—	3	8
4. Undulant Fever ..	—	—	—	—	—	—	—	—	—
5. Malaria—									
(*a*) Tertian	1	68	—	69	2	31	7	38	107
(*b*) Quartan	—	2	—	2	—	2	—	2	4
(*c*) Aestivo-autumnal ..	6	376	—	382	2	128	55	183	565
(*d*) Cerebral	—	2	2	2	—	—	—	—	2
(*e*) Cachexia	2	35	1	37	—	21	4	25	62
(*f*) Blackwater ..	—	38	13	38	—	1	—	1	39
(*g*) Unclassified ..	1	12	—	13	1	14	13	27	40

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
6. Smallpox	—	—	—	—	—	—	—	—	—
Alastrim	—	—	—	—	—	—	—	—	—
7. Measles	—	—	—	—	—	—	—	—	—
8. Scarlet Fever	—	—	—	—	—	—	—	—	—
9. Whooping Cough ..	—	2	—	2	—	—	—	—	2
10. Diphtheria	2	—	—	2	—	—	—	—	2
11. Influenza	4	143	—	147	4	63	38	101	248
12. Miliary Fever ..	—	—	—	—	—	—	—	—	—
13. Mumps	—	—	—	—	—	—	—	—	—
14. Cholera	—	—	—	—	—	—	—	—	—
15. Epidemic Diarrhœa ..	—	—	—	—	—	—	—	—	—
16. Dysentery—									
(*a*) Amœbic	—	38	—	38	—	17	4	21	59
(*b*) Bacillary	—	12	2	12	—	—	2	2	14
(*c*) Undefined or due to other causes ..	—	10	—	10	—	4	6	10	20
17. Plague—									
(*a*) Bubonic	—	—	—	—	—	—	—	—	—
(*b*) Pneumonic ..	—	—	—	—	—	—	—	—	—
(*c*) Septicæmic ..	—	—	—	—	—	—	—	—	—
(*d*) Undefined	—	—	—	—	—	—	—	—	—
18. Yellow Fever ..	—	—	—	—	—	—	—	—	—
19. Spirochætosis icterohæmorrhagica	—	—	—	—	—	—	—	—	—
20. Leprosy	—	—	—	—	—	1	—	1	1
21. Erysipelas	—	—	—	—	—	—	—	—	—
22. Acute Poliomyelitis ..	—	—	—	—	—	—	—	—	—
23. Encephalitis Lethargica	—	—	—	—	—	—	—	—	—
24. Epidemic Cerebrospinal Fever	—	—	—	—	—	—	—	—	—
25. Other Epidemic Diseases—									
(*a*) Rubeola (German Measles)	—	—	—	—	—	—	—	—	—
(*b*) Varicella (Chickenpox)	—	3	—	3	—	1	1	2	5
(*c*) Kala Azar	—	—	—	—	—	—	—	—	—
(*d*) Phlebotomus Fever	—	2	—	2	—	—	—	—	2
(*e*) Dengue	—	2	—	2	—	—	—	—	2
(*f*) Epidemic Dropsy ..	—	—	—	—	—	—	—	—	—
(*g*) Yaws	—	—	—	—	—	—	—	—	—
(*h*) Trypanosomiasis ..	—	—	—	—	—	—	—	—	—
26. Glanders	—	—	—	—	—	—	—	—	—
27. Anthrax	—	1	—	1	—	1	—	1	2
28. Rabies	—	—	—	—	—	—	—	—	—
29. Tetanus	—	—	—	—	—	—	—	—	—
30. Mycosis	—	—	—	—	—	—	—	—	—
31. Tuberculosis, Pulmonary and Laryngeal	—	4	—	4	—	5	1	6	10

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
32. Tuberculosis of the Meninges or Central Nervous System ..	—	—	—	—	—	—	—	—	—
33. Tuberculosis of the Intestines or Peritoneum	—	—	—	—	—	—	—	—	—
34. Tuberculosis of the Vertebral Column ..	—	—	—	—	—	—	—	—	—
35. Tuberculosis of Bones and Joints	—	—	—	—	—	—	—	—	—
36. Tuberculosis of other Organs—									
(*a*) Skin or Subcutaneous Tissue (Lupus)	—	—	—	—	—	—	—	—	—
(*b*) Bones	—	—	—	—	—	—	—	—	—
(*c*) Lymphatic System	—	—	—	—	—	—	—	—	—
(*d*) Genito-urinary ..	—	—	—	—	—	—	—	—	—
(*e*) Other Organs ..	—	—	—	—	—	—	—	—	—
37. Tuberculosis disseminated—									
(*a*) Acute	—	—	—	—	—	—	—	—	—
(*b*) Chronic	—	—	—	—	—	—	—	—	—
38. Syphilis—									
(*a*) Primary	—	—	—	—	—	12	1	13	13
(*b*) Secondary	—	—	—	—	—	5	—	5	5
(*c*) Tertiary	—	—	—	—	—	1	—	1	1
(*d*) Hereditary ..	—	—	—	—	—	—	—	—	—
(*e*) Period not indicated	—	—	—	—	—	3	—	3	3
39. Soft Chancre ..	—	—	—	—	—	2	—	2	2
40. A.—Gonorrhœa and its complications ..	—	4	—	4	—	48	2	50	54
B.—Gonorrhœal Ophthalmia	—	—	—	—	—	—	—	—	—
C.—Gonorrhœal Arthritis	—	—	—	—	—	—	—	—	—
D.—Granuloma Venereum	—	—	—	—	—	—	—	—	—
41. Septicæmia	—	—	—	—	—	—	—	—	—
42. Other Infectious Diseases	—	—	—	—	—	—	—	—	—
II.—General Diseases not mentioned above.									
43. Cancer or other malignant Tumours of the Buccal Cavity	1	—	—	1	—	—	—	—	1
44. Cancer or other malignant Tumours of the Stomach or Liver ..	—	1	—	1	—	—	2	2	3

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
45. Cancer or other malignant Tumours of the Female Genital Organs	—	—	—	—	—	—	—	—	—
46. Cancer or other malignant Tumours of the Peritoneum, Intestines, Rectum	—	—	—	—	—	—	—	—	—
47. Cancer or other malignant Tumours of the Breast	—	—	—	—	—	—	—	—	—
48. Cancer or other malignant Tumours of the Skin	—	1	—	1	—	1	—	1	2
49. Cancer or other malignant Tumours of the Organs not specified ..	—	—	—	—	—	1	—	1	1
50. Tumours, non-malignant	1	1	—	2	—	3	2	5	7
51. Acute Rheumatism ..	—	10	—	10	—	6	6	12	22
52. Chronic Rheumatism	—	2	—	2	—	20	14	34	36
53. Scurvy (including Barlow's Disease) ..	—	—	—	—	—	—	—	—	—
54. Pellagra	—	—	—	—	—	—	—	—	—
55. Beriberi	—	—	—	—	—	—	1	1	1
56. Rickets	—	—	—	—	—	—	—	—	—
57. Diabetes (not including Insipidus)	—	1	—	1	—	10	7	17	18
58. Anæmia—									
(*a*) Pernicious	—	—	—	—	—	—	1	1	1
(*b*) Other Anæmias and Chlorosis	—	10	—	10	—	30	46	76	86
59. Diseases of the Pituitary Body ..	—	—	—	—	—	—	—	—	—
60. Diseases of the Thyroid Gland—									
(*a*) Exophthalmic Goitre	—	—	—	—	—	—	—	—	—
(*b*) Other Diseases of the Thyroid Gland, Myxœdema	—	1	—	1	—	1	2	3	4
61. Diseases of the Para-Thyroid Glands ..	—	—	—	—	—	—	—	—	—
62. Diseases of the Thymus	—	—	—	—	—	—	—	—	—
63. Diseases of the Supra-Renal Glands	—	—	—	—	—	—	—	—	—
64. Diseases of the Spleen	—	—	—	—	—	1	—	1	1
65. Leukæmia—									
(*a*) Leukæmia	—	—	—	—	—	—	—	—	—
(*b*) Hodgkin's Disease..	—	—	—	—	—	—	—	—	—
66. Alcoholism	—	3	—	3	—	—	—	—	3

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
67. Chronic Poisoning by mineral substances (lead, mercury, etc.) ..	—	—	—	—	—	—	—	—	—
68. Chronic Poisoning by organic substances (morphia, cocaine, etc.)	—	—	—	—	—	—	—	—	—
69. Other General Diseases—									
Auto-intoxication ..	—	—	—	—	—	1	—	1	1
Purpura Hæmorrhagica	—	—	—	—	—	—	—	—	—
Hæmophilia	—	—	—	—	—	—	—	—	—
Diabetes Insipidus ..	—	—	—	—	—	—	—	—	—
Other diseases	—	—	—	—	—	1	—	1	1
III.—Affections of the Nervous System and Organs of the Senses.									
70. Encephalitis (not including Encephalitis Lethargica)	—	—	—	—	—	—	—	—	—
71. Meningitis (not including Tuberculous Meningitis or Cerebro-spinal Meningitis)	—	—	—	—	—	—	—	—	—
72. Locomotor Ataxia ..	—	1	—	1	1	—	—	—	1
73. Other affections of the Spinal Cord	—	1	1	1	—	1	—	1	2
74. Apoplexy—									
(*a*) Hemiplegia ..	—	—	—	—	—	—	—	—	—
(*b*) Embolism	—	—	—	—	—	—	—	—	—
(*c*) Thrombosis ..	—	—	—	—	—	—	—	—	—
75. Paralysis—									
(*a*) Hæmorrhage ..	—	1	—	1	—	1	—	1	2
(*b*) Other Paralyses ..	—	—	—	—	—	3	—	3	3
76. General Paralysis of the Insane	—	—	—	—	—	—	—	—	—
77. Other forms of Mental Alienation	—	—	—	—	—	1	1	2	2
78. Epilepsy	—	—	—	—	—	6	1	7	7
79. Eclampsia, Convulsions (non-puerperal), 5 years or over	—	—	—	—	—	—	—	—	—
80. Infantile Convulsions	—	—	—	—	—	—	—	—	—
81. Chorea	—	—	—	—	—	—	—	—	—
82. A.—Hysteria	—	2	—	2	—	1	3	4	6
B.—Neuritis	—	6	—	6	—	18	13	31	37
C.—Neurasthenia ..	—	10	—	10	—	26	17	43	53
83. Cerebral Softening ..	—	—	—	—	—	—	—	—	—

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
84. Other affections of the Nervous System, such as Paralysis Agitans ..	—	4	—	4	—	6	3	9	13
85. Affections of the Organs of Vision—									
(*a*) Diseases of the Eye	—	—	—	—	—	3	—	3	3
(*b*) Conjunctivitis ..	—	5	—	5	—	29	12	41	46
(*c*) Trachoma	—	—	—	—	—	1	—	1	1
(*d*) Tumours of the Eye	—	—	—	—	—	—	—	—	—
(*e*) Other affections of the Eye	—	10	—	10	—	42	7	49	59
86. Affections of the Ear or Mastoid Sinus ..	—	12	—	12	—	105	24	129	141
IV.—Affections of the Circulatory System.									
87. Pericarditis	—	—	—	—	—	—	1	1	1
88. Acute Endocarditis or Myocarditis	—	—	—	—	—	—	—	—	—
89. Angina Pectoris ..	—	—	—	—	—	4	—	4	4
90. Other Diseases of the Heart—									
(*a*) Valvular—	1	2	—	3	—	7	3	10	13
Mitral	—	3	—	3	—	2	1	3	6
Aortic	—	—	—	—	—	—	1	1	1
Tricuspid	—	—	—	—	—	—	—	—	—
Pulmonary	—	—	—	—	—	—	—	—	—
(*b*) Myocarditis ..	—	1	—	1	—	1	1	2	3
91. Diseases of the Arteries—									
(*a*) Aneurism	—	1	1	1	—	—	—	—	1
(*b*) Arterio-Sclerosis ..	—	—	—	—	—	4	1	5	5
(*c*) Other Diseases ..	—	—	—	—	—	—	—	—	—
92. Embolism or Thrombosis (non-cerebral) ..	—	—	—	—	—	—	—	—	—
93. Diseases of the Veins—									
Hæmorrhoids	—	3	—	3	—	15	7	22	25
Varicose	—	—	—	—	—	2	1	3	3
Phlebitis	—	1	—	1	—	—	1	1	2
94. Diseases of the Lymphatic System—									
Filariasis	—	—	—	—	—	—	—	—	—
Lymphangitis	—	1	—	1	—	2	1	3	4
Lymphadenitis, Bubo (non-specific) ..	—	7	—	7	—	8	2	10	17
95. Hæmorrhage of undetermined cause ..	—	—	—	—	—	—	—	—	—
96. Other affections of the Circulatory System	—	1	—	1	—	4	—	4	5

TABLES V AND VI—*continued*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued*.

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total. Admissions.	Yearly Total. Deaths	Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
V.—Affections of the Respiratory System.									
97. Diseases of the Nasal Passages—									
Adenoids	—	—	—	—	—	—	1	1	1
Polypus	—	—	—	—	—	3	—	3	3
Rhinitis	—	—	—	—	—	2	1	3	3
Coryza	—	24	—	24	—	64	36	100	124
98. Diseases of the Larynx—Laryngitis ..	—	6	—	6	—	11	4	15	21
99. Bronchitis—									
(*a*) Acute	1	23	—	24	—	64	33	97	121
(*b*) Chronic	—	4	—	4	—	24	6	30	34
(*c*) Unclassified ..	—	1	—	1	—	3	2	5	6
100. Broncho-Pneumonia	—	5	1	5	—	—	—	—	5
101. Pneumonia—									
(*a*) Lobar	—	10	3	10	—	3	—	3	13
(*b*) Unclassified ..	—	—	—	—	—	—	—	—	—
102. Pleurisy, Empyema	—	9	—	9	—	5	3	8	17
103. Congestion of the Lungs	—	—	—	—	—	—	2	2	2
104. Gangrene of the Lungs	—	—	—	—	—	—	—	—	—
105. Asthma	—	5	—	5	—	11	3	14	19
106. Pulmonary Emphysema	—	—	—	—	—	—	—	—	—
107. Other affections of the Lungs—									
Pulmonary Spirochætosis	—	3	—	3	1	—	—	—	3
Other Diseases of the Respiratory System	—	—	—	—	—	10	1	11	11
VI.—Diseases of the Digestive System.									
108. A.—Diseases of Teeth or Gums—Caries, Pyorrhœa, etc.	—	23	—	23	—	124	52	176	199
B.—Other affections of the Mouth—									
Stomatitis ..	—	2	—	2	—	5	5	10	12
Glossitis, etc. ..	—	—	—	—	—	5	—	5	5
109. Affections of the Pharynx or Tonsils—									
Tonsillitis	—	52	1	52	—	46	21	67	119
Pharyngitis	2	8	—	10	1	27	12	39	49
110. Diseases of the Œsophagus	—	1	—	1	—	—	—	—	1
111. A.—Ulcer of the Stomach	—	1	—	1	—	7	4	11	12
B.—Ulcer of the Duodenum ..	—	5	—	5	—	2	1	3	8

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
112. Other affections of the Stomach—									
Gastritis	—	30	—	30	—	30	12	42	72
Dyspepsia, etc... ..	—	26	—	26	—	114	51	165	191
113. Diarrhœa and Enteritis—									
Under two years ..	—	18	1	18	—	24	20	44	62
114. Diarrhœa and Enteritis—									
Two years and over ..	—	31	1	31	—	61	24	85	116
Colitis	—	14	—	14	—	22	7	29	43
Ulceration	—	1	—	1	—	—	—	—	1
114A. Sprue	—	—	—	—	—	1	—	1	1
115. Ankylostomiasis ..	—	—	—	—	—	—	—	—	—
116. Diseases due to Intestinal Parasites—									
(*a*) Cestoda (Tænia) ..	—	5	—	5	—	10	7	17	22
(*b*) Trematoda (Flukes)	—	—	—	—	—	—	—	—	—
(*c*) Nematoda (other than Ankylostoma)	—	—	—	—	—	—	1	1	1
Ascaris	—	1	—	1	—	3	—	3	4
Trichocephalus Dispar	—	—	—	—	—	—	—	—	—
Trichina	—	—	—	—	—	—	—	—	—
Dracunculus ..	—	—	—	—	—	—	—	—	—
Strongylus	—	—	—	—	—	—	—	—	—
Oxyuris	—	—	—	—	—	—	2	2	2
(*d*) Coccidia	—	—	—	—	—	—	—	—	—
(*e*) Other Parasites ..	—	1	—	1	—	—	—	—	1
(*f*) Unclassified ..	—	—	—	—	—	—	1	1	1
117. Appendicitis ..	2	21	2	23	1	3	4	7	30
118. Hernia	—	1	—	1	—	7	2	9	10
119. A.—Affections of the Anus, Fistula, etc.	—	3	—	3	—	11	6	17	20
B.—Other affections of the Intestines									
Enteroptosis ..	—	3	—	3	—	2	—	2	5
Constipation ..	—	1	—	1	—	29	29	58	59
120. Acute Yellow Atrophy of the Liver ..	—	—	—	—	—	—	—	—	—
121. Hydatid of the Liver	—	—	—	—	—	—	—	—	—
122. Cirrhosis of the Liver—									
(*a*) Alcoholic	—	—	—	—	—	—	—	—	—
(*b*) Other forms ..	—	2	1	2	—	1	—	1	3
123. Biliary Calculus ..	—	1	—	1	—	1	—	1	2
124. Other affections of the Liver—									
Abscess	—	3	—	3	—	1	—	1	4
Hepatitis	—	8	—	8	—	3	2	5	13
Cholecystitis	—	1	—	1	—	1	1	2	3
Jaundice	—	5	—	5	1	2	—	2	7

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
125. Diseases of the Pancreas	—	—	—	—	—	—	—	—	—
126. Peritonitis (of unknown cause)	—	1	1	1	—	—	—	—	1
127. Other affections of the Digestive System ..	1	11	—	12	2	15	6	21	33
VII.—Diseases of the Genito-Urinary System (Non-Venereal).									
128. Acute Nephritis ..	—	4	1	4	—	1	1	2	6
129. Chronic Nephritis ..	—	2	—	2	—	2	—	2	4
130, A.—Chyluria ..	—	—	—	—	—	—	—	—	—
B.—Schistosomiasis	—	—	—	—	—	—	—	—	—
131. Other affections of the Kidneys—Pyelitis, etc.	—	4	—	4	1	5	9	14	18
132. Urinary Calculus ..	—	1	—	1	—	3	1	4	5
133. Diseases of the Bladder—Cystitis ..	1	13	—	14	—	16	9	25	39
134. Diseases of the Urethra—									
(*a*) Stricture	—	1	—	1	—	7	—	7	8
(*b*) Other	—	2	—	2	—	10	—	10	12
135. Diseases of the Prostate—									
Hypertrophy	—	3	—	3	—	—	—	—	3
Prostatis	—	—	—	—	—	3	—	3	3
136. Diseases (non-venereal) of the Genital Organs of Man—									
Epididymitis	1	2	—	3	—	2	—	2	5
Orchitis	—	2	—	2	—	8	—	8	10
Hydrocele	—	—	—	—	—	—	—	—	—
Ulcer of Penis	—	—	—	—	—	1	—	1	1
137. Cysts or other non-malignant Tumours of the Ovaries	—	1	—	1	—	—	—	—	1
138. Salpingitis— ..	—	1	—	1	—	—	1	1	2
Abscess of the Breast..	—	—	—	—	—	—	3	3	3
139. Uterine Tumours (non-malignant) ..	—	3	—	3	—	—	5	5	8
140. Uterine Hæmorrhage (non-puerperal) ..	—	2	—	2	—	—	5	5	7

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
141. A.—Metritis ..	—	4	—	4	—	—	19	19	23
B.—Other affections of the Female Genital Organs..	—	3	—	3	—	—	32	32	35
Displacement of Uterus	—	—	—	—	—	—	—	—	—
Amenorrhœa ..	—	—	—	—	—	—	13	13	13
Dysmenorrhœa ..	—	4	—	4	—	—	15	15	19
Leucorrhœa ..	—	—	—	—	—	—	9	9	9
142. Diseases of the Breast (non-puerperal)	—	—	—	—	—	—	—	—	—
Mastitis	—	2	—	2	—	—	6	6	8
Abscess of Breast ..	—	—	—	—	—	—	2	2	2
VIII.—Puerperal State.									
143. A.—Normal Labour	—	89	—	89	1	—	20	20	109
B.—Accidents of Pregnancy—									
(*a*) Abortion ..	—	17	—	17	—	—	6	6	23
(*b*) Ectopic Gestation	—	1	1	1	—	—	—	—	1
(*c*) Other accidents of Pregnancy ..	—	29	—	29	—	—	30	30	59
144. Puerperal Hæmorrhage	—	1	—	1	—	—	—	—	1
145. Other accidents of Parturition	—	7	—	7	—	—	2	2	9
146. Puerperal Septicæmia	—	1	1	1	—	—	—	—	1
147. Phlegmasia Dolens..	—	—	—	—	—	—	—	—	—
148. Puerperal Eclampsia	—	—	—	—	—	—	—	—	—
149. Sequelæ of Labour..	—	—	—	—	—	—	—	—	—
150. Puerperal affections of the Breast	—	—	—	—	—	—	—	—	—
IX.—Affections of the Skin and Cellular Tissues.									
151. Gangrene	—	1	—	1	—	—	—	—	1
152. Boil	—	8	—	8	—	55	15	70	78
153. Abscess	1	33	—	34	—	32	6	38	72
Carbuncle	2	8	—	10	1	2	—	2	12
Whitlow	—	—	—	—	—	10	5	15	15
Cellulitis	—	9	—	9	—	15	5	20	29
Ulcers	1	7	—	8	—	75	16	91	99
154. A.—Tinea	—	—	—	—	—	9	3	12	12
B.—Scabies	—	—	—	—	—	1	—	1	1

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
155. Other Diseases of the Skin—									
Erythema	—	5	—	5	1	1	—	1	6
Urticaria	—	6	—	6	—	18	7	25	31
Eczema	—	—	—	—	—	32	10	42	42
Herpes	—	—	—	—	—	3	3	6	6
Psoriasis	—	—	—	—	—	2	2	4	4
Elephantiasis	—	—	—	—	—	—	—	—	—
Myiasis	—	1	—	1	—	4	3	7	8
Chigoes	—	2	—	2	—	7	5	12	14
Cutaneous Leishmaniasis	—	—	—	—	—	—	2	2	2
Others	—	16	—	16	1	60	23	83	99
X.—Diseases of Bones and Organs of Locomotion (other than Tuberculous).									
156. Diseases of Bones—									
Osteitis	—	—	—	—	—	1	—	1	1
157. Diseases of Joints—									
Arthritis	—	5	—	5	—	9	9	18	23
Synovitis	—	2	—	2	1	12	1	13	15
158. Other Diseases of Bones or Organs of Locomotion	—	17	—	17	—	52	9	61	78
XI.—Malformations.									
159. Malformations—									
Hypospadias	—	—	—	—	—	—	—	—	—
Hydrocephalus.. ..	—	—	—	—	—	—	—	—	—
Spina Bifida, etc. ..	—	—	—	—	—	—	—	—	—
XII.—Diseases of Infancy.									
160. Congenital Debility	—	—	—	—	—	1	—	1	1
161. Premature Birth ..	—	—	—	—	—	—	—	—	—
162. Other affections of Infancy	—	2	1	2	—	—	2	2	4
163. Infant Neglect (infants of three months or over)	—	—	—	—	—	—	—	—	—
XIII.—Affections of Old Age.									
164. Senility	—	2	—	2	—	—	—	—	2
Senile Dementia ..	—	—	—	—	—	—	—	—	—

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
XIV.—Affections produced by External Causes.									
165. Suicide by Poisoning	—	1	1	1	—	—	—	—	1
166. Corrosive Poisoning (intentional)	—	1	—	1	—	—	—	—	1
167. Suicide by Gas Poisoning	—	—	—	—	—	—	—	—	—
168. Suicide by Hanging or Strangulation ..	—	—	—	—	—	—	—	—	—
169. Suicide by Drowning	—	—	—	—	—	—	—	—	—
170. Suicide by Firearms	—	—	—	—	—	1	—	1	1
171. Suicide by Cutting or Stabbing Instruments	—	—	—	—	—	—	—	—	—
172. Suicide by Jumping from a Height	—	—	—	—	—	—	—	—	—
173. Suicide by Crushing	—	—	—	—	—	—	—	—	—
174. Other Suicides ..	—	1	1	1	—	—	—	—	1
175. Food Poisoning— Botulism	—	7	—	7	—	1	—	1	8
176. Attacks of Poisonous Animals—									
Snake Bite	—	2	—	2	—	—	—	—	2
Insect Bite	—	1	—	1	—	17	8	25	26
Others	—	—	—	—	—	1	—	1	1
177. Other Accidental Poisonings	—	5	—	5	—	3	1	4	9
178. Burns (by Fire) ..	—	2	—	2	—	5	2	7	9
179. Burns (other than by Fire)	—	4	—	4	—	9	2	11	15
180. Suffocation (accidental)	—	—	—	—	—	—	—	—	—
181. Poisoning by Gas (accidental)	—	—	—	—	—	—	—	—	—
182. Drowning (accidental)	—	—	—	—	—	—	—	—	—
183. Wounds (by Firearms, war excepted) ..	—	5	—	5	—	2	—	2	7
184. Wounds (by Cutting or Stabbing Instruments)	—	2	—	2	—	43	2	45	47
185. Wounds (by Fall) ..	—	13	—	13	—	17	5	22	35
186. Wounds (in Mines or Quarries)	—	—	—	—	—	—	—	—	—
187. Wounds (by Machinery)	—	5	—	5	1	12	1	13	18
188. Wounds (crushing, *e.g.*, railway accidents, etc.)	—	13	—	13	—	8	—	8	21

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients
	Remained in Hospitals at the end of 1928.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
189. Injuries inflicted by Animals, Bites, Kicks, etc.	—	13	—	13	—	20	12	32	45
190. Wounds inflicted on Active Service	—	—	—	—	—	—	—	—	—
191. Executions of civilians by belligerents ..	—	—	—	—	—	—	—	—	—
192. A.—Over fatigue ..	—	—	—	—	—	—	—	—	—
B.—Hunger or Thirst	—	—	—	—	—	—	—	—	—
193. Exposure to Cold, Frost Bite, etc. ..	—	—	—	—	—	1	—	1	1
194. Exposure to Heat—									
Heat Stroke	—	3	—	3	—	6	1	7	10
Sunstroke	—	3	—	3	—	1	—	1	4
195. Lightning Stroke ..	—	—	—	—	—	—	—	—	—
196. Electric Shock ..	—	—	—	—	—	—	—	—	—
197. Murder by Firearms	—	—	—	—	—	—	—	—	—
198. Murder by Cutting or Stabbing Instruments	—	—	—	—	—	—	—	—	—
199. Murder by other means	—	—	—	—	—	—	—	—	—
200. Infanticide (murder of an infant under one year)	—	—	—	—	—	—	—	—	—
201. A.—Dislocation ..	—	5	—	5	—	5	1	6	11
B.—Sprain	—	9	—	9	—	32	1	33	42
C.—Fracture ..	—	15	—	15	1	15	6	21	36
202. Other external injuries	—	29	—	29	2	101	12	113	142
203. Deaths by Violence of unknown cause ..	—	—	—	—	—	—	—	—	—
XV.—Ill-Defined Diseases.									
204. Sudden Death (cause unknown)	—	—	—	—	—	—	—	—	—
205. A.—Diseases not already specified or ill-defined—									
Ascites	—	—	—	—	—	—	—	—	—
Œdema	—	—	—	—	—	—	—	—	—
Asthenia	—	10	—	10	—	13	6	19	29
Shock	—	—	—	—	—	—	—	—	—
Hyperpyrexia	—	1	—	1	—	—	—	—	1
Neuralgia and Headache	—	9	—	9	—	11	6	17	26
Pyrexia of uncertain origin..	1	25	—	26	2	16	11	27	53
Debility..	—	—	—	—	—	27	10	37	37
Other Ill-defined Diseases	—	—	—	—	—	6	—	6	6
Not yet Diagnosed ..	—	2	—	2	1	—	1	1	3
B.—Malingering ..	—	—	—	—	—	—	—	—	—
TOTAL	33	1,761	40	1,794	32	2,320	1,080	3,400	5,194

TABLES V AND VI.

FOR ALL DENOMINATIONS.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929.

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
I.—Epidemic, Endemic, and Infectious Diseases.									
1. Enteric Group—									
(*a*) Typhoid Fever ..	3	41	10	44	2	—	—	—	44
(*b*) Paratyphoid A ..	—	7	2	7	1	—	—	—	7
(*c*) Paratyphoid B ..	—	1	1	1	—	—	—	—	1
(*d*) Type not defined ..	—	4	—	4	—	1	—	1	5
2. Typhus	—	1	—	1	—	—	—	—	1
3. Relapsing Fever ..	3	259	10	262	2	83	9	92	354
4. Undulant Fever ..	—	1	—	1	—	—	—	—	1
5. Malaria—									
(*a*) Tertian	15	673	17	688	8	2,605	1,010	3,615	4,303
(*b*) Quartan	1	16	—	17	—	289	86	375	392
(*c*) Aestivo-autumnal..	37	3,278	13	3,315	44	14,044	2,391	16,435	19,750
(*d*) Cerebral	—	13	10	13	—	—	—	—	13
(*e*) Cachexia	9	248	9	257	5	534	168	702	959
(*f*) Blackwater Fever..	1	83	27	84	1	4	—	4	88
(*g*) Unclassified ..	2	248	—	250	3	3,655	782	4,437	4,687
6. Smallpox	—	6	3	6	—	—	—	—	6
Alastrim	—	—	—	—	—	—	—	—	—
7. Measles	—	34	—	34	1	26	12	38	72
8. Scarlet Fever ..	—	—	—	—	—	—	—	—	—
9. Whooping Cough ..	2	22	1	24	2	22	23	45	69
10. Diphtheria	2	—	—	2	—	—	—	—	2
11. Influenza	7	433	—	440	13	1,256	287	1,543	1,983
12. Miliary Fever ..	—	—	—	—	—	—	—	—	—
13. Mumps	—	11	—	11	—	62	38	100	111
14. Cholera	—	—	—	—	—	—	—	—	—
15. Epidemic Diarrhœa ..	—	—	—	—	—	4	2	6	6
16. Dysentery—									
(*a*) Amœbic	4	451	86	455	16	226	117	343	798
(*b*) Bacillary	3	105	10	108	3	73	20	93	201
(*c*) Undefined or due to other causes ..	11	136	33	147	6	340	110	450	597
17. Plague—									
(*a*) Bubonic	—	—	—	—	—	—	—	—	—
(*b*) Pneumonic.. ..	—	—	—	—	—	—	—	—	—
(*c*) Septicæmic ..	—	—	—	—	—	—	—	—	—
(*d*) Undefined	—	—	—	—	—	—	—	—	—
18. Yellow Fever ..	—	—	—	—	—	—	—	—	—
19. Spirochætosis icterohæmorrhagica	—	2	—	2	—	1	—	1	3
20. Leprosy	74	372	10	446	173	192	125	317	763
21. Erysipelas	—	9	—	9	2	2	—	2	11
22. Acute Poliomyelitis..	—	2	1	2	—	—	—	—	2
23. Encephalitis Lethargica	—	1	—	1	—	—	—	—	1
24. Epidemic Cerebrospinal Fever	—	12	12	12	—	—	—	—	12

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
25. Other Epidemic Diseases—									
(*a*) Rubeola (German Measles)	—	1	—	1	—	—	—	—	1
(*b*) Varicella (Chicken-pox)	3	199	—	202	5	172	27	199	401
(*c*) Kala Azar	—	—	—	—	—	—	—	—	—
(*d*) Phlebotomus Fever	—	10	—	10	—	—	—	—	10
(*e*) Dengue	—	4	—	4	—	—	—	—	4
(*f*) Epidemic Dropsy ..	—	—	—	—	—	—	—	—	—
(*g*) Yaws	140	3,012	22	3,152	105	41,237	34,370	75,607	78,759
(*h*) Trypanosomiasis ..	44	993	156	1,037	161	45	6	51	1,088
26. Glanders	—	—	—	—	—	—	—	—	—
27. Anthrax	—	16	4	16	1	1	—	1	17
28. Rabies	—	—	—	—	—	3	—	3	3
29. Tetanus	1	14	4	15	—	—	—	—	15
30. Mycosis	—	4	—	4	—	4	1	5	9
31. Tuberculosis, Pulmonary and Laryngeal	30	265	67	295	26	184	57	241	536
32. Tuberculosis of the Meninges or Central Nervous System ..	—	3	2	3	—	—	—	—	3
33. Tuberculosis of the Intestines or Peritoneum	—	11	4	11	—	3	—	3	14
34. Tuberculosis of the Vertebral Column ..	4	14	1	18	—	7	2	9	27
35. Tuberculosis of Bones and Joints	2	28	1	30	5	10	1	11	41
36. Tuberculosis of other Organs—									
(*a*) Skin or Subcutaneous Tissue (Lupus)	—	11	—	11	1	—	—	—	11
(*b*) Bones	—	6	—	6	3	7	5	12	18
(*c*) Lymphatic System	5	30	2	35	4	32	42	74	109
(*d*) Genito-urinary ..	1	—	—	1	—	—	—	—	1
(*e*) Other Organs ..	—	2	1	2	—	8	1	9	11
37. Tuberculosis disseminated—									
(*a*) Acute	—	1	1	1	—	5	1	6	7
(*b*) Chronic	—	1	1	1	—	—	—	—	1
38. Syphilis—									
(*a*) Primary	15	463	1	478	7	1,736	1,096	2,832	3,310
(*b*) Secondary	13	384	3	397	10	2,429	1,899	4,328	4,725
(*c*) Tertiary	31	545	7	576	21	3,273	3,642	6,915	7,491
(*d*) Hereditary	2	81	7	83	2	314	225	539	622
(*e*) Period not indicated	—	8	—	8	1	779	670	1,449	1,457
39. Soft Chancre ..	—	26	—	26	4	39	1	40	66

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
40. A.—Gonorrhœa and its complications ..	29	820	7	849	31	4,936	485	5,421	6,270
B.—Gonorrhœal Ophthalmia	—	13	—	13	—	56	16	72	85
C.—Gonorrhœal Arthritis	—	16	—	16	2	46	6	52	68
D.—Granuloma Venereum	—	1	1	1	—	2	1	3	4
41. Septicæmia	1	14	11	15	—	1	—	1	16
42. Other Infectious Diseases	—	3	—	3	—	19	20	39	42
II.—General Diseases not mentioned above.									
43. Cancer or other malignant Tumours of the Buccal Cavity	—	4	1	4	—	1	1	2	6
44. Cancer or other malignant Tumours of the Stomach or Liver ..	1	9	5	10	—	2	2	4	14
45. Cancer or other malignant Tumours of the Peritoneum, Intestines, Rectum	1	1	—	2	—	—	—	—	2
46. Cancer or other malignant Tumours of the Female Genital Organs	—	5	2	5	1	—	1	1	6
47. Cancer or other malignant Tumours of the Breast	1	4	—	5	—	—	—	—	5
48. Cancer or other malignant Tumours of the Skin	—	11	1	11	1	4	—	4	15
49. Cancer or other malignant Tumours of the Organs not specified ..	2	26	4	28	2	6	2	8	36
50. Tumours, non-malignant	7	135	5	142	4	44	24	68	210
51. Acute Rheumatism ..	—	87	1	87	5	1,158	472	1,630	1,717
52. Chronic Rheumatism	9	148	1	157	5	1,494	483	1,977	2,134
53. Scurvy (including Barlow's Disease) ..	—	21	—	21	—	12	2	14	35
54. Pellagra	1	—	—	1	—	—	—	—	1
55. Beriberi	5	6	—	11	1	1	1	2	13
56. Rickets	—	5	1	5	—	17	8	25	30
57. Diabetes (not including Insipidus)	—	8	1	8	—	19	8	27	35

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
58. Anæmia—									
(*a*) Pernicious	5	74	10	79	9	138	57	195	274
(*b*) Other Anæmias and Chlorosis	13	50	3	63	2	592	230	822	885
59. Diseases of the Pituitary Body ..	—	—	—	—	—	—	—	—	—
60. Diseases of the Thyroid Gland—									
(*a*) ExophthalmicGoitre	—	6	1	6	1	2	—	2	8
(*b*) Other Diseases of the Thyroid Gland, Myxœdema	1	6	1	7	—	5	6	11	18
61. Diseases of the Parathyroid Glands ..	—	1	—	1	—	—	—	—	1
62. Diseases of the Thymus	—	—	—	—	—	—	—	—	—
63. Diseases of the Supra-Renal Glands	—	—	—	—	—	—	—	—	—
64. Diseases of the Spleen	—	29	3	29	2	447	253	700	729
65. Leukæmia—									
(*a*) Leukæmia	—	3	1	3	1	1	—	1	4
(*b*) Hodgkin's Disease	—	6	1	6	—	—	—	—	6
66. Alcoholism	—	8	—	8	—	2	—	2	10
67. Chronic Poisoning by mineral substances (lead, mercury, etc.) ..	—	—	—	—	—	—	—	—	—
68. Chronic Poisoning by organic substances (morphia, cocaine, etc.)	—	—	—	—	—	3	2	5	5
69. Other General Diseases—									
Auto-intoxication ..	—	—	—	—	—	1	—	1	1
Purpura Hæmorrhagica	—	2	—	2	—	—	—	—	2
Hæmophilia	—	—	—	—	—	—	—	—	—
Diabetes Insipidus ..	—	1	—	1	—	1	—	1	2
Other Diseases ..	—	—	—	—	—	1	1	2	2
III.—Affections of the Nervous System and Organs of the Senses.									
70. Encephalitis (not including Encephalitis Lethargica)	—	3	2	3	1	—	—	—	3
71. Meningitis (not including Tuberculous Meningitis or Cerebro-spinal Meningitis)	—	10	6	10	—	3	—	3	13
72. Locomotor Ataxia ..	1	7	—	8	3	8	—	8	16

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
73. Other affections of the Spinal Cord	1	6	1	7	—	14	3	17	24
74. Apoplexy—									
(*a*) Hemiplegia ..	5	39	6	44	3	13	3	16	60
(*b*) Embolism	—	—	—	—	—	—	—	—	—
(*c*) Thrombosis ..	—	—	—	—	—	—	—	—	—
75. Paralysis—									
(*a*) Hæmorrhage ..	2	3	1	5	—	10	2	12	17
(*b*) Other Paralyses ..	4	52	8	56	3	30	6	36	92
76. General Paralysis of the Insane	—	—	—	—	—	—	—	—	—
77. Other forms of Mental Alienation	5	56	—	61	1	45	4	49	110
78. Epilepsy	1	80	6	81	3	120	53	173	254
79. Eclampsia, Convulsions (non-puerperal), 5 years or over	—	—	—	—	—	—	1	1	1
80. Infantile Convulsions	—	2	1	2	—	4	4	8	10
81. Chorea	—	1	—	1	—	3	3	6	7
82. A.—Hysteria	—	10	—	10	—	77	28	105	115
B.—Neuritis	1	76	—	77	1	752	295	1,047	1,124
C.—Neurasthenia ..	—	29	—	29	—	115	54	169	198
83. Cerebral Softening ..	—	—	—	—	—	—	—	—	—
84. Other affections of the Nervous System, such as Paralysis Agitans ..	3	60	5	63	5	828	192	1,020	1,083
85. Affections of the Organs of Vision—									
(*a*) Diseases of the Eye	2	157	—	159	9	109	47	156	315
(*b*) Conjunctivitis ..	11	456	1	467	12	10,954	7,218	18,172	18,639
(*c*) Trachoma	1	56	—	57	5	194	107	301	358
(*d*) Tumours of the Eye	1	10	—	11	—	6	—	6	17
(*e*) Other affections of the Eye	23	380	—	403	17	1,134	418	1,552	1,955
86. Affections of the Ear or Mastoid Sinus ..	3	115	4	118	2	4,051	1,785	5,836	5,954
IV.—Affections of the Circulatory System.									
87. Pericarditis	—	3	1	3	—	3	1	4	7
88. Acute Endocarditis or Myocarditis ..	—	8	3	8	—	8	6	14	22
89. Angina Pectoris ..	—	1	—	1	—	13	1	14	15
90. Other Diseases of the Heart—									
(*a*) Valvular—	—	30	5	30	—	103	33	136	166
Mitral	—	16	4	16	—	17	13	30	46
Aortic	—	1	1	1	—	4	3	7	8
Tricuspid	—	—	—	—	—	1	—	1	1
Pulmonary	—	—	—	—	—	1	—	1	1
(*b*) Myocarditis ..	—	6	2	6	—	7	3	10	16

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
91. Diseases of the Arteries—									
(*a*) Aneurism	1	3	3	4	—	2	1	3	7
(*b*) Arterio-Sclerosis ..	—	4	—	4	—	4	1	5	9
(*c*) Other Diseases ..	—	6	1	6	—	4	—	4	10
92. Embolism or Thrombosis (non-cerebral) ..	—	—	—	—	—	1	—	1	1
93. Diseases of the Veins—									
Hæmorrhoids	1	38	—	39	—	78	9	87	126
Varicose	—	12	—	12	—	19	1	20	32
Phlebitis	1	3	—	4	—	19	1	20	24
94. Diseases of the Lymphatic System—									
Filariasis	2	27	3	29	—	57	8	65	94
Lymphangitis	—	48	—	48	1	114	23	137	185
Lymphadenitis, Bubo (non-specific) ..	5	124	2	129	3	344	38	382	511
95. Hæmorrhage of undetermined cause ..	1	4	1	5	—	6	1	7	12
96. Other affections of the Circulatory System	—	3	—	3	—	24	14	38	41
V.—Affections of the Respiratory System.									
97. Diseases of the Nasal Passages—									
Adenoids	—	6	—	6	—	34	10	44	50
Polypus..	—	2	—	2	—	14	3	17	19
Rhinitis..	—	2	—	2	2	168	47	215	217
Coryza	—	155	—	155	—	2,073	291	2,364	2,519
98. Diseases of the Larynx—Laryngitis ..	—	25	—	25	—	592	138	730	755
99. Bronchitis—									
(*a*) Acute	13	787	6	800	24	16,902	6,838	23,740	24,540
(*b*) Chronic	14	374	6	388	7	4,165	1,334	5,499	5,887
(*c*) Unclassified ..	1	4	—	5	—	3,065	817	3,882	3,887
100. Broncho-Pneumonia	—	206	60	206	5	99	70	169	375
101. Pneumonia—									
(*a*) Lobar	22	634	161	656	15	131	37	168	824
(*b*) Unclassified ..	1	14	5	15	—	39	35	74	89
102. Pleurisy, Empyema	6	156	7	162	5	188	61	249	411
103. Congestion of the Lungs	—	2	1	2	—	—	2	2	4
104. Gangrene of the Lungs	—	—	—	—	—	—	—	—	—
105. Asthma	1	95	3	96	3	327	75	402	498
106. Pulmonary Emphysema	—	4	—	4	—	17	4	21	25

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
107. Other affections of the Lungs—									
Pulmonary Spirochætosis	—	12	1	12	1	8	2	10	22
Other affections of the Respiratory System	—	—	—	—	—	45	9	54	54
VI.—Diseases of the Digestive System.									
108. A.—Diseases of Teeth or Gums—									
Caries, Pyorrhœa, etc.	3	108	—	111	2	6,572	3,350	9,922	10,033
B.—Other affections of the Mouth..	—	16	1	16	2	7	6	13	29
Stomatitis ..	1	31	1	32	1	1,181	400	1,581	1,613
Glossitis, etc. ..	—	4	1	4	—	156	43	199	203
109. Affections of the Pharynx or Tonsils—									
Tonsillitis	3	129	1	132	4	1,529	438	1,967	2,099
Pharyngitis	1	56	—	57	2	1,550	491	2,041	2,098
110. Other affections of the Œsophagus ..	—	5	—	5	—	10	—	10	15
111. A.—Ulcer of the Stomach	—	6	—	6	1	10	—	10	16
B.—Ulcer of the Duodenum ..	—	6	—	6	—	2	1	3	9
112. Other affections of the Stomach—									
Gastritis	2	108	1	110	2	906	450	1,356	1,466
Dyspepsia, etc. ..	—	77	—	77	1	2,079	1,139	3,218	3,295
113. Diarrhœa and Enteritis—									
Under two years ..	12	432	88	444	16	1,453	721	2,174	2,618
114. Diarrhœa and Enteritis—									
Two years and over ..	1	330	29	331	20	3,507	981	4,488	4,819
Colitis	—	121	2	121	2	671	371	1,042	1,163
Ulceration	—	3	1	3	—	1	—	1	4
114A. Sprue	1	—	—	1	—	1	—	1	2
115. Ankylostomiasis ..	85	1,353	248	1,438	75	4,104	2,512	6,616	8,054
116. Diseases due to Intestinal Parasites—									
(*a*) Cestoda (Tænia) ..	2	196	1	198	6	5,395	1,736	7,131	7,329
(*b*) Trematoda (Flukes)	—	15	—	15	—	31	2	33	48

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
116. Diseases due to Intestinal Parasites—*cont.*									
(*c*) Nematoda (other than Ankylostoma)	—	4	—	4	—	65	15	80	84
Ascaris	2	77	—	79	4	3,486	2,913	6,399	6,478
Trichocephalus Dispar	—	—	—	—	—	2	—	2	2
Trichina	—	1	—	1	—	1	—	1	2
Dracunculus ..	—	—	—	—	—	9	1	10	10
Strongylus	—	3	—	3	—	—	—	—	3
Oxyuris	—	—	—	—	—	15	11	26	26
(*d*) Coccidia	—	—	—	—	—	1	—	1	1
(*e*) Other Parasites ..	—	17	—	17	1	—	—	—	17
(*f*) Unclassified ..	—	—	—	—	—	—	1	1	1
117. Appendicitis ..	3	30	3	33	1	5	6	11	44
118. Hernia	13	388	9	401	27	125	4	129	530
119. A.—Affections of the Anus, Fistula, etc.	1	55	1	56	1	37	14	51	107
B.—Other affections of the Intestines									
Enteroptosis ..	—	101	2	101	1	86	63	149	250
Constipation ..	—	189	—	189	1	19,708	7,198	26,906	27,095
120. Acute Yellow Atrophy of the Liver ..	—	—	—	—	—	—	—	—	—
121. Hydatid of the Liver	—	—	—	—	—	—	—	—	—
122. Cirrhosis of the Liver—									
(*a*) Alcoholic	1	12	2	13	2	7	1	8	21
(*b*) Other forms ..	—	37	16	37	3	13	—	13	50
123. Biliary Calculus ..	—	4	—	4	—	1	—	1	5
124. Other affections of the Liver—									
Abscess	2	33	7	35	2	5	1	6	41
Hepatitis	4	57	3	61	1	235	72	307	368
Cholecystitis	—	9	—	9	1	3	1	4	13
Jaundice	—	33	5	33	1	60	9	69	102
125. Diseases of the Pancreas	—	1	—	1	—	—	—	—	1
126. Peritonitis (of unknown cause)	—	6	3	6	—	24	4	28	34
127. Other affections of the Digestive System..	2	49	—	51	1	1,728	347	2,075	2,126
VII.—Diseases of the Genito-Urinary System (Non-Venereal).									
128. Acute Nephritis ..	1	35	8	36	—	23	18	41	77
129. Chronic Nephritis ..	1	32	13	33	—	16	3	19	52
130. A.—Chyluria ..	—	3	1	3	—	8	4	12	15
B.—Schistosomiasis	3	223	2	226	5	1,839	287	2,126	2,352

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
131. Other affections of the Kidneys—Pyelitis, etc.	—	14	1	14	1	35	11	46	60
132. Urinary Calculus ..	—	5	—	5	—	5	1	6	11
133. Diseases of the Bladder—Cystitis ..	3	65	2	68	2	156	31	187	255
134. Diseases of the Urethra—									
(*a*) Stricture	4	71	3	75	4	54	—	54	129
(*b*) Other	1	18	1	19	—	47	2	49	68
135. Diseases of the Prostate—									
Hypertrophy	1	9	1	10	2	1	—	1	11
Prostatis	—	8	—	8	—	8	—	8	16
136. Diseases (non-venereal) of the Genital Organs of Man—									
Epididymitis	2	80	3	82	7	43	—	43	125
Orchitis	2	133	—	135	2	530	—	530	665
Hydrocele	24	494	3	518	22	152	—	152	670
Ulcer of Penis	1	106	—	107	3	41	—	41	148
137. Cysts or other non-malignant Tumours of the Ovaries	—	13	—	13	—	11	5	16	29
138. Salpingitis—	—	10	1	10	1	—	8	8	18
Abscess of the Pelvis ..	—	3	1	3	—	—	4	4	7
139. Uterine Tumours (non-malignant) ..	—	16	—	16	2	—	8	8	24
140. Uterine Hæmorrhage (non-puerperal) ..	1	12	1	13	—	—	18	18	31
141. A.—Metritis ..	—	13	—	13	1	—	49	49	62
B.—Other affections of the Female Genital Organs	2	9	—	11	1	—	64	64	75
Displacement of Uterus	—	4	—	4	—	—	3	3	7
Amenorrhœa ..	—	5	—	5	—	—	44	44	49
Dysmenorrhœa ..	—	15	—	15	—	—	127	127	142
Leucorrhœa ..	—	5	—	5	—	—	58	58	63
142. Diseases of the Breast (non-puerperal)	—	5	—	5	—	—	11	11	16
Mastitis	—	17	—	17	—	—	236	236	253
Abscess of Breast ..	1	9	—	10	2	—	113	113	123

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
VIII.—Puerperal State.									
143. A.—Normal Labour	1	332	—	333	6	—	28	28	361
B.—Accidents of Pregnancy—									
(*a*) Abortion ..	—	57	3	57	—	—	29	29	86
(*b*) Ectopic Gestation	—	1	1	1	—	—	—	—	1
(*c*) Other accidents of Pregnancy ..	—	61	5	61	1	—	75	75	136
144. Puerperal Hæmorrhage	—	5	—	5	—	—	3	3	8
145. Other accidents of Parturition	—	33	3	33	2	—	10	10	43
146. Puerperal Septicæmia	—	11	4	11	—	—	3	3	14
147. Phlegmasia Dolens..	—	1	—	1	—	—	2	2	3
148. Puerperal Eclampsia	—	4	1	4	—	—	—	—	4
149. Sequelæ of Labour..	—	7	—	7	—	—	6	6	13
150. Puerperal affections of the Breast	—	—	—	—	—	—	2	2	2
IX.—Affections of the Skin and Cellular Tissues.									
151. Gangrene	4	44	6	48	7	2	5	7	55
152. Boil	—	74	—	74	3	1,373	210	1,583	1,657
153. Abscess	32	663	8	695	36	1,907	455	2,362	3,057
Carbuncle	3	21	1	24	3	4	1	5	29
Whitlow	1	43	—	44	—	298	104	402	446
Cellulitis	11	340	14	351	16	1,734	254	1,988	2,339
Ulcers	172	3,395	29	3,567	332	16,573	4,376	20,949	24,516
154. A.—Tinea	—	3	—	3	—	282	135	417	420
B.—Scabies ..	3	114	—	117	5	5,370	1,741	7,111	7,228
155. Other Diseases of the Skin—									
Erythema	—	15	—	15	1	17	2	19	34
Urticaria	1	20	—	21	—	157	53	210	231
Eczema	5	89	—	94	3	1,097	336	1,433	1,527
Herpes	—	9	1	9	1	91	28	119	128
Psoriasis	—	2	—	2	—	69	33	102	104
Elephantiasis	16	151	6	167	7	134	54	188	355
Myiasis	—	1	—	1	—	106	89	195	196
Chigoes	5	90	1	95	2	734	234	968	1,063
Cutaneous Leishmaniasis	—	1	—	1	—	2	1	3	4
Other Diseases of the Skin and Cellular Tissue	2	40	2	42	2	584	96	680	722

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
X.—Diseases of Bones and Organs of Locomotion (other than Tuberculous).									
156. Diseases of Bones—Osteitis	7	77	5	84	6	220	77	297	381
157. Diseases of Joints—Arthritis	8	182	6	190	12	555	118	673	863
Synovitis	2	106	—	108	3	496	77	573	681
158. Other Diseases of Bones or Organs of Locomotion	8	295	—	303	11	5,935	1,327	7,262	7,565
XI.—Malformations.									
159. Malformations—Hypospadias	—	1	1	1	—	—	—	—	1
Hydrocephalus ..	1	6	—	7	1	5	—	5	12
Spina Bifida, etc. ..	—	—	—	—	—	—	—	—	—
XII.—Diseases of Infancy.									
160. Congenital Debility	—	2	—	2	—	5	3	8	10
161. Premature Birth ..	—	5	4	5	—	—	1	1	6
162. Other affections of Infancy	—	11	4	11	—	4	3	7	18
163. Infant Neglect (infants of three months or over)	—	4	—	4	1	2	—	2	6
XIII.—Affections of Old Age.									
164. Senility	—	36	11	36	4	19	—	19	55
Senile Dementia ..	—	2	—	2	—	—	—	—	2
XIV.—Affections produced by External Causes.									
165. Suicide by Poisoning	—	2	1	2	—	—	—	—	2
166. Corrosive Poisoning (intentional)	—	3	1	3	—	—	—	—	3
167. Suicide by Gas Poisoning	—	—	—	—	—	—	—	—	—
168. Suicide by Hanging or Strangulation ..	—	—	—	—	—	1	—	1	1

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
169. Suicide by Drowning	—	—	—	—	—	—	—	—	—
170. Suicide by Firearms	—	—	—	—	—	1	—	1	1
171. Suicide by Cutting or Stabbing Instruments	—	2	2	2	—	—	—	—	2
172. Suicide by Jumping from a Height	—	—	—	—	—	—	—	—	—
173. Suicide by Crushing	—	—	—	—	—	—	—	—	—
174. Other Suicides ..	—	1	1	1	—	1	—	1	2
175. Food Poisoning ..	—	14	—	14	—	3	—	3	17
Botulism	—	—	—	—	—	—	—	—	—
176. Attacks of Poisonous Animals—									
Snake Bite	—	30	—	30	2	89	24	113	143
Insect Bite	—	9	—	9	—	204	48	252	261
Others	—	2	—	2	—	1	—	1	3
177. Other Accidental Poisonings	—	32	4	32	1	4	5	9	41
178. Burns (by Fire) ..	12	158	17	170	12	680	325	1,005	1,175
179. Burns (other than by Fire)	1	29	3	30	2	146	38	184	214
180. Suffocation (accidental)	—	—	—	—	—	—	—	—	—
181. Poisoning by Gas (accidental)	—	—	—	—	—	—	—	—	—
182. Drowning (accidental)	—	5	—	5	—	—	—	—	5
183. Wounds (by Firearms, war excepted) ..	4	54	1	58	6	11	—	11	69
184. Wounds (by Cutting or Stabbing Instruments)	26	432	13	458	12	3,848	598	4,446	4,904
185. Wounds (by Fall) ..	7	294	3	301	18	2,940	347	3,287	3,588
186. Wounds (in Mines or Quarries)	2	7	—	9	—	46	1	47	56
187. Wounds (by Machinery)	11	386	4	397	21	1,132	13	1,145	1,542
188. Wounds (crushing, *e.g.*, railway accidents, etc.)	4	100	10	104	8	35	4	39	143
189. Injuries inflicted by Animals, Bites, Kicks, etc.	11	167	12	178	8	1,271	158	1,429	1,607
190. Wounds inflicted on Active Service	—	—	—	—	—	—	—	—	—
191. Executions of civilians by belligerents ..	—	—	—	—	—	—	—	—	—
192. A.—Over fatigue ..	—	4	—	4	—	4	—	4	8
B.—Hunger or Thirst	—	5	1	5	—	—	—	—	5
193. Exposure to Cold, Frost bite, etc. ..	—	1	—	1	—	206	39	245	246
194. Exposure to Heat—									
Heat Stroke	—	3	—	3	—	6	2	8	11
Sunstroke	—	3	—	3	—	2	1	3	6

TABLES V AND VI—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1929—*continued.*

DISEASES.	IN-PATIENTS.					OUT-PATIENTS.			Total Cases, In- and Out-Patients.
	Remained in Hospitals at the end of 1928.	Yearly Total.		Total Cases Treated.	Remaining in Hospitals at the end of 1929.	Males.	Females.	Total.	
		Admissions.	Deaths.						
195. Lightning Stroke ..	—	2	—	2	2	—	—	—	2
196. Electric Shock ..	—	1	—	1	—	—	—	—	1
197. Murder by Firearms	—	—	—	—	—	—	—	—	—
198. Murder by Cutting or Stabbing Instruments	—	1	1	1	—	—	—	—	1
199. Murder by other means	—	—	—	—	—	—	—	—	—
200. Infanticide (murder of an infant under one year)	—	—	—	—	—	—	—	—	—
201. A.—Dislocation ..	—	52	—	52	2	59	22	81	133
B.—Sprain	3	106	—	109	—	1,238	157	1,395	1,504
C.—Fracture ..	27	358	16	385	57	111	24	135	520
202. Other external injuries	40	514	—	554	33	13,140	1,393	14,533	15,087
203. Deaths by Violence of unknown cause ..	—	—	—	—	—	—	—	—	—
XV.—Ill-Defined Diseases.									
204. Sudden Death (cause unknown)	—	1	1	1	—	—	—	—	1
205. A.—Diseases not already specified or ill-defined—									
Ascites	5	56	13	61	8	22	8	30	91
Œdema	2	8	1	10	—	64	27	91	101
Asthenia	—	29	3	29	1	140	66	206	235
Shock	—	1	—	1	—	—	—	—	1
Hyperpyrexia	1	12	1	13	—	1	—	1	14
Neuralgia and Headache	—	18	—	18	4	1,521	308	1,829	1,847
Pyrexia of uncertain origin..	3	142	7	145	23	808	220	1,028	1,173
Debility	—	—	—	—	—	133	36	169	169
Other Ill-defined Diseases	—	2	—	2	—	70	23	93	95
Not yet Diagnosed ..	—	5	—	5	1	—	1	1	6
B.—Malingering ..	—	16	—	16	—	28	—	28	44
TOTAL	1,301	33,502	1,615	34,803	1,758	253,375	107,726	361,101	395,904
Total Cases treated by Medical Staff on tour..	—	—	—	—	—	32,645	24,540	57,185	57,185
Total Cases treated by African Dispensers ..	—	699	10	699	—	26,497	13,249	39,746	40,445
Total Cases treated by Missionaries supplied with Government drugs and equipment..	—	3,327	29	3,327	—	6,715	5,816	12,531	15,858
GRAND TOTAL ..	1,301	37,528	1,654	38,829	1,758	319,232	151,331	470,563	509,392

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